

## **Oracle® Fusion Middleware**

Development Guide for Oracle WebCenter WSRP Producer for  
.NET

11g Release 1 (11.1.1.7.0)

**E14117-06**

April 2013

Oracle Fusion Middleware Development Guide for Oracle WebCenter WSRP Producer for .NET, 11g Release 1 (11.1.1.7.0)

E14117-06

Copyright © 2010, 2013, Oracle and/or its affiliates. All rights reserved.

Primary Author: Jennifer Shipman

Contributing Author: Promila Chitkara

This software and related documentation are provided under a license agreement containing restrictions on use and disclosure and are protected by intellectual property laws. Except as expressly permitted in your license agreement or allowed by law, you may not use, copy, reproduce, translate, broadcast, modify, license, transmit, distribute, exhibit, perform, publish, or display any part, in any form, or by any means. Reverse engineering, disassembly, or decompilation of this software, unless required by law for interoperability, is prohibited.

The information contained herein is subject to change without notice and is not warranted to be error-free. If you find any errors, please report them to us in writing.

If this is software or related documentation that is delivered to the U.S. Government or anyone licensing it on behalf of the U.S. Government, the following notice is applicable:

U.S. GOVERNMENT RIGHTS Programs, software, databases, and related documentation and technical data delivered to U.S. Government customers are "commercial computer software" or "commercial technical data" pursuant to the applicable Federal Acquisition Regulation and agency-specific supplemental regulations. As such, the use, duplication, disclosure, modification, and adaptation shall be subject to the restrictions and license terms set forth in the applicable Government contract, and, to the extent applicable by the terms of the Government contract, the additional rights set forth in FAR 52.227-19, Commercial Computer Software License (December 2007). Oracle America, Inc., 500 Oracle Parkway, Redwood City, CA 94065.

This software or hardware is developed for general use in a variety of information management applications. It is not developed or intended for use in any inherently dangerous applications, including applications that may create a risk of personal injury. If you use this software or hardware in dangerous applications, then you shall be responsible to take all appropriate fail-safe, backup, redundancy, and other measures to ensure its safe use. Oracle Corporation and its affiliates disclaim any liability for any damages caused by use of this software or hardware in dangerous applications.

Oracle and Java are registered trademarks of Oracle and/or its affiliates. Other names may be trademarks of their respective owners.

Intel and Intel Xeon are trademarks or registered trademarks of Intel Corporation. All SPARC trademarks are used under license and are trademarks or registered trademarks of SPARC International, Inc. AMD, Opteron, the AMD logo, and the AMD Opteron logo are trademarks or registered trademarks of Advanced Micro Devices. UNIX is a registered trademark of The Open Group.

This software or hardware and documentation may provide access to or information on content, products, and services from third parties. Oracle Corporation and its affiliates are not responsible for and expressly disclaim all warranties of any kind with respect to third-party content, products, and services. Oracle Corporation and its affiliates will not be responsible for any loss, costs, or damages incurred due to your access to or use of third-party content, products, or services.

---

---

# Contents

<b>Preface</b> .....	v
<b>1 Introducing the Oracle WebCenter WSRP Producer for .NET</b>	
1.1 About the Oracle WebCenter WSRP Producer for .NET .....	1-1
1.2 Additional Documentation.....	1-1
<b>2 Understanding the Oracle WebCenter WSRP Producer for .NET Configuration File</b>	
2.1 Portlet Nodes .....	2-1
2.2 Portlet Content Transformation Rulesets .....	2-3
2.2.1 Creating Custom Rules .....	2-3
<b>3 Managing Required Script Files</b>	
3.1 Managing Required Script Files.....	3-1
<b>4 Configuring Security Options</b>	
4.1 WS-Security (WSS) Configuration.....	4-1
4.1.1 WSDL Configuration.....	4-1
4.1.2 Web.config Configuration .....	4-2
4.2 SSL Configuration.....	4-3
<b>5 Implementing Common Development Scenarios</b>	
5.1 Adding a Web Part as a Portlet.....	5-1
5.2 Adding a Web Part with ASP.NET AJAX Controls.....	5-4
5.2.1 Managing AJAX Outside the .NET Framework.....	5-5
5.3 Adding an ASP.NET Application.....	5-9
5.4 Adding a Help Page .....	5-10
5.5 Using Markup Transformation.....	5-11
5.5.1 Transforming Text .....	5-11
5.5.2 Creating a Custom Ruleset.....	5-11
5.6 Using Portlet Styles.....	5-12
5.7 Using Interportlet Communication with JavaScript.....	5-13
5.8 Adding User Profile Data .....	5-18
5.9 Setting Up Security Tokens .....	5-21

5.9.1	Displaying a Token in a Web Part.....	5-22
5.9.2	Oracle WebLogic Portal with Default SAMLCredentialMapperV2.....	5-25
5.9.3	Oracle WebLogic Portal with Custom Signing Key .....	5-26
5.9.4	UNT for Oracle WebLogic Portal .....	5-26
5.9.5	SAML for Oracle WebCenter Portal .....	5-27
5.9.6	UNT for Oracle WebCenter Portal .....	5-29
5.10	Using Oracle WebCenter Portal Features.....	5-31
5.10.1	Using Customization in Oracle WebCenter Portal.....	5-31
5.10.2	Using Oracle WebCenter Portal Parameters.....	5-32

---

---

# Preface

*Development Guide for Oracle WebCenter WSRP Producer for .NET* provides detailed information on authoring portlets using the Oracle WebCenter WSRP Producer for .NET.

## Audience

This document is intended for Oracle WebCenter Portal developers who want to create WSRP portlets using the Oracle WebCenter WSRP Producer for .NET.

## Documentation Accessibility

For information about Oracle's commitment to accessibility, visit the Oracle Accessibility Program website at <http://www.oracle.com/pls/topic/lookup?ctx=acc&id=docacc>.

### Access to Oracle Support

Oracle customers have access to electronic support through My Oracle Support. For information, visit <http://www.oracle.com/pls/topic/lookup?ctx=acc&id=info> or visit <http://www.oracle.com/pls/topic/lookup?ctx=acc&id=trs> if you are hearing impaired.

## Related Documents

For more information, see the following documents:

- *Oracle Fusion Middleware Installation and Upgrade Guide for Oracle WebCenter WSRP Producer for .NET*
- Release Notes

## Conventions

The following text conventions are used in this document:

Convention	Meaning
<b>boldface</b>	Boldface type indicates graphical user interface elements associated with an action, or terms defined in text or the glossary.

---

<b>Convention</b>	<b>Meaning</b>
<i>italic</i>	Italic type indicates book titles, emphasis, or placeholder variables for which you supply particular values.
monospace	Monospace type indicates commands within a paragraph, URLs, code in examples, text that appears on the screen, or text that you enter.

---

---

---

# Introducing the Oracle WebCenter WSRP Producer for .NET

This chapter introduces you to the Oracle WebCenter WSRP Producer for .NET.

## 1.1 About the Oracle WebCenter WSRP Producer for .NET

The OASIS WSRP (Web Services for Remote Portlets) Technical Committee works to standardize presentation-oriented web services for use by aggregating intermediaries, such as portals. For more information, see the OASIS WSRP site:

<http://www.oasis-open.org/committees/wsrp/>.

The Oracle WebCenter WSRP Producer for .NET is a collection of libraries that surface .NET applications and Web Parts as WSRP 1.0 or 2.0 portlets. This release supports the latest .NET 3.5 features such as AJAX and allows developers to code in .NET without coding against a .NET WSRP framework.

## 1.2 Additional Documentation

The following additional documentation is available.

Resource	Description
Installation Guide	This guide describes the prerequisites (such as required software) and procedures for installing and upgrading the Oracle WebCenter WSRP Producer for .NET.
Release Notes	The release notes provide information about new features, issues addressed, and known issues in the release.
WSRP 1.0 specification	<a href="http://www.oasis-open.org/committees/download.php/3343/oasis-200304-wsrp-specification-1.0.pdf">http://www.oasis-open.org/committees/download.php/3343/oasis-200304-wsrp-specification-1.0.pdf</a>
WSRP 2.0 specification	<a href="http://docs.oasis-open.org/wsrp/v2/wsrp-2.0-spec.html">http://docs.oasis-open.org/wsrp/v2/wsrp-2.0-spec.html</a>





---

---

# Understanding the Oracle WebCenter WSRP Producer for .NET Configuration File

This chapter describes contents of the Oracle WebCenter WSRP Producer for .NET configuration file, `wsrp-producer.xml`.

The set up of a Web Part or .NET application as a WSRP portlet is not complete until the `wsrp-producer.xml` configuration file is filled out properly. Understanding this file is critical.

Open the `wsrp-producer.xml` file installed in `<installdir>\wsrpdefault` for reference.

- [Section 2.1, "Portlet Nodes"](#)
- [Section 2.2, "Portlet Content Transformation Rulesets"](#)

## 2.1 Portlet Nodes

Each Web Part or .NET web application you wish to expose as a portlet must have its own `<portlet>` node. Portlet nodes can include the following elements:

- **Portlet handle:** The `<handle>` must be a string that uniquely identifies the portlet. Alphanumeric characters are suggested for this portlet property.
- **Supported locale:** The `<supported-locale>` must be a comma-delimited list of supported locales. The typical format is `[2 char language code] "-" [2 char country code]` (for example, `en-US`). This information is sent to the WSRP consumer portal during registration. These values also drive the localization for core properties of the portlet such as title and description.
- **Localized portlet information:** The `<description>`, `<display-name>`, `<title>`, and `<short-title>` properties are localized according to the "lang" attribute value specified. Each value is returned as a `LocalizedString` for the corresponding WSRP values of `description`, `displayName`, `title`, and `shortTitle`. See the `PortletDescription` type in the WSRP specification for more details on these properties.
- **Supported modes:** The `<supports>` element includes several sub-elements:
  - **Portlet modes:** The `<portlet-modes>` element defines URLs (typically a relative path) for relevant WSRP portlet modes. The Oracle WebCenter WSRP Producer for .NET handles portlet modes as follows:

**Table 2–1 Portlet Modes**

Portlet mode	Action
wsrp:view	Render the portlet.
wsrp:edit	Render the portlet editor.
wsrp:help	Render a web page for help.
wsrp:preview	This mode is treated the same as wsrp:view.
urn:javafx:portlet:mode:custom:edit_defaults	This WSRP custom mode is for Oracle WebCenter Portal customization.

Any mode not on this list will be treated like wsrp:view mode. See the sections that follow for examples of each portlet mode.

- **MIME type:** The <mime-type> element defines a MIME type supported by the portlet. If all MIME types are supported, pass in "\*". See the MarkupType type in the WSRP specification for more information on this setting.
- **User profile information:** The <user-profile> element allows you to define user profile information in <profile-item> elements for use in portlets. For more information on using this element, see [Section 5.8, "Adding User Profile Data."](#)
- **Portlet content transformation:** The <RuleSetRef> section allows you to associate existing transformation rules (defined outside the portlet node) with a portlet. Use the ID defined in the associated <RuleSet> element. Multiple rulesets can be referenced by placing the IDs in the appropriate order in a comma-delimited string. To add your own transformation rules, add a <RewriterConfig> element and follow the same structure defined for the <Rules> element. Existing rules can be combined with custom rules as shown in the example below:

```
<RuleSetRef>Default</RuleSetRef>
<RewriterConfig>
  <Rules>
    <RewriterRule>
      <LookFor>test.csv</LookFor>
      <ChangeTo>download.csv</ChangeTo>
      <ChangeToAbsolute>>false</ChangeToAbsolute>
      <ApplyTo>*</ApplyTo>
      <MakeResource>>false</MakeResource>
    </RewriterRule>
  </Rules>
</RewriterConfig >
```

---

**Note:** If custom rules are combined with existing rulesets, custom rules will be applied in order of listing after all of the referenced rulesets.

---

In the above example, the portlet will apply all rules associated with the "Default" rule set and then replace any occurrences of "test.csv" with "download.csv".

For details on rulesets, see the next section.

## 2.2 Portlet Content Transformation Rulesets

The Oracle WebCenter WSRP Producer for .NET utilizes regular expressions to transform relative URLs to absolute URLs and to URLs proxied through the WSRP consumer if necessary. Specific transformation rules are defined in the `wsrp-producer.xml` file in `<RuleSet>` elements and referenced in each portlet. Rulesets are a way of clustering a group of markup transformation rules.

By default, there is a single default ruleset that ensures that hrefs are transformed and proxied as WSRP resources, but "src" URL references (images and javascript) are transformed but not proxied. To use different transformation settings, create a new ruleset as described below. For an example of using rulesets in a portlet, see [Section 5.5, "Using Markup Transformation."](#)

---

**Note:** It is strongly recommended that you not modify the default ruleset.

---

### 2.2.1 Creating Custom Rules

As noted in the previous section, custom rules can be defined within the portlet node or outside the portlet node in a `<RuleSet>` element. Rulesets can be very useful if you have a set of portlets that should use the same rules. Instead of copying the URL transformation rules for each portlet, you can create a single ruleset and reference the ID in each portlet. The syntax rules for the `<RewriterConfig>` element are the same for both locations. (If the rule is defined within an individual portlet node, the `<RuleSet>` element is omitted.)

The `<RewriterConfig>` element contains a `<Rules>` element that contains `<RewriterRule>` elements, which define transformation rules using the elements in the following table.

**Table 2–2 Transformation Rule Elements**

Element	Value/Description
<code>&lt;LookFor&gt;</code>	Required. Defines the URL to search for using text and/or regular expressions. For example, <code>&lt;LookFor&gt; (activeSrc\ " :\ " ) ( [^\ " ] + ) &lt;/LookFor&gt;</code> indicates that the transformer should look for URLs like "activeSrc":"/test/foo/bar.js" or "activeSrc":"test2/bas.html" for replacement.  <code>&lt;LookFor&gt;</code> must be the first element in the <code>&lt;RewriterRule&gt;</code> element.
<code>&lt;ChangeToAbsolute&gt;</code>	Required. If set to <b>true</b> , transforms any URL identified with the <code>&lt;LookFor&gt;</code> element into an absolute URL. (Typically, the transformation you wish to perform on an URL is to make it an absolute URL since a relative URL does not make sense when proxied through a WSRP consumer.)
<code>&lt;MakeResource&gt;</code>	Required. If set to <b>true</b> , ensures that the URL is proxied by the WSRP consumer. While this is important for resources that you wish to protect, applying this option liberally can have significant performance ramifications since the WSRP consumer must rewrite the URL and browser caching cannot be relied upon. Use the <code>&lt;ApplyTo&gt;</code> to ensure that only those URLs you wish to proxy are included.
<code>&lt;ApplyTo&gt;</code>	Limits the URLs that are transformed and proxied using a comma-delimited list of keywords. (All URLs returned by the <code>&lt;LookFor&gt;</code> element will be transformed to absolute URLs if <code>&lt;ChangeToAbsolute&gt;</code> is included in the rule.)

**Table 2–2 (Cont.) Transformation Rule Elements**

<b>Element</b>	<b>Value/Description</b>
<ChangeTo>	<p>Changes the text returned by the &lt;LookFor&gt; element to the provided text. (This is not used for URL transformation, but allows you to use the &lt;RewriterRule&gt; element to change any text within the portlet, and can include regular expressions.) For example, the entry below redirects traffic from myhost to myhost.mycompany.com instead:</p> <pre>&lt;RewriterRule&gt;   &lt;LookFor&gt;myhost[\:]*[0-9]* &lt;/LookFor&gt;   &lt;ChangeTo&gt;myhost.mycompany.com&lt;/ChangeTo&gt; &lt;/RewriterRule&gt;</pre>

---

---

---

## Managing Required Script Files

This chapter discusses the Oracle WebCenter WSRP Producer for .NET script files (jquery-1.3.2.min.js and msPortletResizeHelper.js.)

### 3.1 Managing Required Script Files

The Oracle WebCenter WSRP Producer for .NET makes use of two files: jquery-1.3.2.min.js and msPortletResizeHelper.js. By default, these files are made into WSRP resources. Unlike other javascript files, portlet content transformation rulesets (described in [Section 2.2, "Portlet Content Transformation Rulesets"](#)) are not applied to these files. To take advantage of browser caching of javascript you may wish to deploy these required scripts to a web server, such as Apache.

To override the default behavior, add the `jQueryExternalURL` and `msResizeHelperExternalURL` .NET application settings keys, as shown in [Example 3-1](#) below, to the Oracle WebCenter WSRP Producer for .NET's Web.config file.

**Example 3-1 .NET Application Settings Keys**

```
<appSettings>
  <add key="jQueryExternalURL"
value="http://myhost.mycompany.com/path/jquery-1.3.2.min.js" />
  <add key="msResizeHelperExternalURL"
value="http://myhost.mycompany.com/path/msPortletResizeHelper.js" />
</appSettings>
```



---



---

## Configuring Security Options

The WSRP specification does not specify which security techniques should be employed, but encourages anyone using message-level security to use WS-Security standards. The specification makes mention of transport-level security, but only requires that "a Producer's WSDL declare ports for an HTTPS service entry point." This chapter discusses the security options supported by the Oracle WebCenter WSRP Producer for .NET.

- [Section 4.1, "WS-Security \(WSS\) Configuration"](#)
- [Section 4.2, "SSL Configuration"](#)

### 4.1 WS-Security (WSS) Configuration

The Oracle WebCenter WSRP Producer for .NET supports two types of WS-Security token profiles: SAML and Username Token (UNT). For details on WS-Security standards, see the OASIS WS-Security site:

<http://www.oasis-open.org/committees/wss/>.

#### 4.1.1 WSDL Configuration

There are two WSDL files that contain WSS policy information:

- **WSRP 1.0:** `wsrp_v1_bindings.wsdl` and `WSRPService.wsdl`  
(`<installdir>\wsrpdefault\wsdl\1.0`)
- **WSRP 2.0:** `wsrp-2.0-bindings.wsdl` and `WSRPService.wsdl`  
(`<installdir>\wsrpdefault\wsdl\2.0`)

The `WSRPService.wsdl` file should include the following as a child of the root element `<wsdl:definitions>` and before the `<wsdl:service>` element:

**Example 4-1 SAML**

```
<wsp:UsingPolicy wsdl:Required="true" />
<wsp:Policy s1:Id="SAMLAuth.xml">
  <wsp:All>
    <wssp:Identity>
      <wssp:SupportedTokens>
        <wssp:SecurityToken
TokenTypes="http://docs.oasis-open.org/wss/2004/01/oasis-2004-01-saml-token-profile
-1.0#SAMLAssertionID">
          <wssp:Claims>
            <wssp:ConfirmationMethod>sender-vouches</wssp:ConfirmationMethod>
          </wssp:Claims>
        </wssp:SecurityToken>
      </wssp:SupportedTokens>
    </wssp:Identity>
  </wsp:All>
</wsp:Policy>
```

```

        </wssp:SupportedTokens>
    </wssp:Identity>
</wsp:All>
</wsp:Policy>

```

#### Example 4-2 UNT

```

<wsp:UsingPolicy wsdl:Required="true" />
  <wsp:Policy s1:Id="UNTAAuth.xml">
    <wsp:All>
      <wssp:Identity>
        <wssp:SupportedTokens>
          <wssp:SecurityToken
TokenType="http://docs.oasis-open.org/wss/2004/01/oasis-200401-wss-username-token-
profile-1.0#UsernameToken">
            <wssp:UsePassword
Type="http://docs.oasis-open.org/wss/2004/01/oasis-200401-wss-username-token-profi
le-1.0#PasswordText"/>
          </wssp:SecurityToken>
        </wssp:SupportedTokens>
      </wssp:Identity>
    </wsp:All>
  </wsp:Policy>

```

The `UsingPolicy` must be set to "required" or certain WSRP consumers (such as Oracle WebLogic Portal) will not honor the security policy. The `Policy` node is a standard WS-Security policy element where SAML v1.1 sender-vouches confirmation is defined. See the WS-Security specification for details.

The most important piece to note for WSDL configuration is the `Id` attribute for the policy. This must be referenced in the `wsrp*bindings.wsdl` file. Open the `wsrp_v1_bindings.wsdl` or `wsrp-2.0-bindings.wsdl` file and find the `<wsdl:input>` elements with the names `getMarkup` and `performBlockingInteraction`. These sections should reference which policy to use. For example, if the `Id` for the policy in `WSRPService` is "SAMLAuth.xml", the policy reference in `wsrp*bindings.wsdl` would look like the following:

```

<wsp:Policy xmlns:wsp="http://schemas.xmlsoap.org/ws/2004/09/policy">
  <wsp:PolicyReference URI="#SAMLAuth.xml"/>
</wsp:Policy>

```

(If the `Id` for the policy in `WSRPService.wsdl` is "UNTAAuth.xml", the `PolicyReference` URI value in `wsrp*bindings.wsdl` would be "#UNTAAuth.xml".)

### 4.1.2 Web.config Configuration

The Oracle WebCenter WSRP Producer for .NET uses Microsoft Web Services Extensions (WSE) 2.0 SP3. This section discusses the default way in which WSE is set up to handle WS-Security tokens. To learn more about WSE and security tokens, refer to the Microsoft documentation (<http://msdn.microsoft.com/en-us/library/ms824677.aspx>).

Security aspects of WSE are managed under the `<security>` element under the `<microsoft.web.services2>` element in `Web.config`.

The default UNT and SAML Security Token Managers defined in `Web.config` do not actually perform authentication. Instead, they strip off the token XML and provide it to individual portlets registered under the WSRP producer. This allows individual portlets to implement their own authentication and authorization methodologies. To



---

implement authentication at the WSRP SOAP endpoints, create your own SecurityTokenManager for WSE following the Microsoft documentation.

---

**Note:** WSE does not properly handle WSS 1.0 security tokens sent by the Oracle WebCenter Portal WSRP Consumer, so the Oracle WebCenter WSRP Producer for .NET uses a request filter to decrypt any encrypted content, validate signatures, and then pass the modified SOAP message without encryption and signature to WSE. To learn more about the default request filter implemented for security tokens sent from Oracle WebCenter Portal, see the development tutorials in [Section 5, "Implementing Common Development Scenarios."](#)

---

To learn more about the default UNT and Security Token Managers, see [Section 5.9, "Setting Up Security Tokens"](#) in the next section. Source code for the default SecurityTokenManager is available in the `\wsrpdefault\src` folder in the installation directory.

## 4.2 SSL Configuration

To set up SSL (either one-way or two-way), follow the Microsoft documentation on configuring IIS and the documentation provided for your WSRP consumer portal. Use "https" on all endpoint URLs in WSRPService.wsdl. For WSRP resources, the Oracle WebCenter WSRP Producer for .NET will determine whether to use http or https depending on which was used to access the endpoint.

---

**Note:** Two-way SSL is not supported in Oracle WebCenter Portal.

---



---

# Implementing Common Development Scenarios

This chapter provides step-by-step tutorials for common development scenarios:

- Section 5.1, "Adding a Web Part as a Portlet"
- Section 5.2, "Adding a Web Part with ASP.NET AJAX Controls"
- Section 5.3, "Adding an ASP.NET Application"
- Section 5.4, "Adding a Help Page"
- Section 5.5, "Using Markup Transformation"
- Section 5.6, "Using Portlet Styles"
- Section 5.7, "Using Interportlet Communication with JavaScript"
- Section 5.8, "Adding User Profile Data"
- Section 5.9, "Setting Up Security Tokens"
- Section 5.10, "Using Oracle WebCenter Portal Features"

## 5.1 Adding a Web Part as a Portlet

By default, the ASP.NET Web Part editor zone supports three different types of preferences (referred to as Personalization). This section illustrates how to work with the default preferences. The Oracle WebCenter WSRP Producer for .NET also supports custom Personalization editors.

In the example below, steps 1-3 create an ASP.NET Web Part just as you would for consumption in ASP.NET outside a WSRP producer, and steps 5-8 add the Web Part to the Oracle WebCenter WSRP Producer for .NET. Refer to the Microsoft documentation for more details on how to create Web Parts from User Controls (<http://msdn.microsoft.com/en-us/magazine/cc300767.aspx>).

1. Open a Visual Studio Web Application Project and create a Web User Control named TestPreferences.ascx.
2. Add three labels named lblStringPref, lblBooleanPref, and lblEnumPref.
3. Create three properties that include the [Personalizable, WebBrowsable] attribute. Match the label display values to the properties as shown in the example code below:

```
protected void Page_Load(object sender, EventArgs e)
{
```

```

        lblBooleanPref.Text = "Checkbox Pref: " + _boolPref;
        lblStringPref.Text = "Text Pref: " + _stringPref;
        lblEnumPref.Text = "Dropdown Pref: " + _enumPref;

    }
    #region Preferences
    private string _stringPref = "";
    private bool _boolPref = false;

    public enum TestEnum
    {
        ListItem1, ListItem2, ListItem3
    }
    private TestEnum _enumPref = TestEnum.ListItem2;

    [Personalizable, WebBrowsable]
    public string TextPref
    {
        get { return _stringPref; }
        set { _stringPref = value; }
    }

    [Personalizable, WebBrowsable]
    public bool CheckboxPref
    {
        get { return _boolPref; }
        set { _boolPref = value; }
    }

    [Personalizable, WebBrowsable]
    public TestEnum DropdownPrefs
    {
        get { return _enumPref; }
        set { _enumPref = value; }
    }
    #endregion

```

4. Test that the code compiles before continuing.
5. Make a copy of the existing `\ASPNET_AJAX_sample` folder under `<installdir>\wsrpdefault\portlets` and rename it "TestPreferences".
6. Replace the `Simple_DateTime.ascx` file with the `TestPreferences.ascx` file you created in steps 1-3.
7. Copy the compiled assembly from your Visual Studio project to the `<installdir>\wsrpdefault\bin` folder.
8. Update the `default.aspx` file in `<installdir>\wsrpdefault\portlets\TestPreferences` to reference your control instead of the `Simple_Date_Time` control. The resulting code should look something like the following:

```

<%@ Page Language="C#"
MasterPageFile="~/portlets/Resources/MasterPages/WSRP.Master" Title="Content
Page Test" %>
<% Register src= "~/portlets/TestPreferences/UserControl/TestPreferences.ascx"
tagname="TestPreferences" tagprefix="uc1" %>
<asp:Content ID="Content1" ContentPlaceHolderID="webpartcontrol"
Runat="Server">
    <uc1:TestPreferences ID="TestPreferences1" runat="server" />
</asp:Content>

```

9. Update the `<installdir>\wsrpdefault\wsrp-producer.xml` file to include your portlet as follows:
  - Make a copy of an existing `<portlet>` element and its contents.
  - Change the handle, display name, description, title, and short title elements to the correct values for the new portlet.
  - Update the `<url>` node under the `<portlet-mode>` element to point to your portlet.

For the example above, the `<portlet>` element would look like the following:

```
<portlet>
  <handle>TestPreferences</handle>
  <supported-locale>en,fr</supported-locale>
  <descriptions>
    <description lang="en">Test Preferences</description>
    <description lang="fr">Test Preferences</description>
  </descriptions>
  <display-names>
    <display-name lang="en">Test Preferences</display-name>
    <display-name lang="fr">Test Preferences</display-name>
  </display-names>
  <titles>
    <title lang="en">Test Preferences</title>
    <title lang="fr">Test Preferences</title>
  </titles>
  <short-titles>
    <short-title lang="en">Test Preferences</short-title>
    <short-title lang="fr">Test Preferences</short-title>
  </short-titles>
  <supports>
    <portlet-modes>
      <portlet-mode>
        <name>wsrp:view</name>
        <url>/portlets/TestPreferences/default.aspx</url>
      </portlet-mode>
      <portlet-mode>
        <name>wsrp:edit</name>
        <url>/portlets/TestPreferences/default.aspx</url>
      </portlet-mode>
    </portlet-modes>
    <mime-type>text/html</mime-type>
  </supports>
  <user-profile>
    <profile-item>businessInfo/online/email</profile-item>
  </user-profile>
</portlet>
```

10. Register the Oracle WebCenter WSRP Producer for .NET by pointing your WSRP consumer at the WSDL URL that is in the shortcut Start | Programs | Oracle WebCenter WSRP Producer for .NET | WSRP 1.0 WSDL. (Refer to the product documentation for your WSRP consumer portal for details on how to register a WSRP producer WSDL.)
11. The portlet should now be available in your WSRP consumer. Test the portlet:
  - a. Add the portlet to your portal. You should see the three labels showing the default values set for the preferences in the `TestPreferences.ascx` file.

- b. Access the preference editor according to the documentation for your WSRP consumer portal. You should see the same preference editor you would see if you added your own Web Part editor zone in .NET. Change the preferences, click Close, and observe that the labels change.
- c. Log out and log back in to your portal. The preference values you changed should be persisted.

## 5.2 Adding a Web Part with ASP.NET AJAX Controls

A key feature of the Oracle WebCenter WSRP Producer for .NET is support for controls that are rendered using ASP.NET AJAX.

This tutorial starts with the example in the previous section. Again, most of the steps are typical tasks required to set up an ASP.NET Web Part to use ASP.NET AJAX functionality. Refer to the Microsoft documentation for details on how to set up ASP.NET AJAX script managers and update panels.

1. Open the project you created in [Section 5.1, "Adding a Web Part as a Portlet"](#).
2. From the AJAX Extensions portion of the Visual Studio toolbox, add a Script Manager and an Update Panel.
3. Add a label, a text box, and a button inside the Update Panel.
4. Add a label, a text box, and a button outside the Update Panel. When you are finished, the source view should look something like the following:

```
<asp:Label ID="lblStringPref" runat="server" Text="Label"></asp:Label><br />
<asp:Label ID="lblBooleanPref" runat="server" Text="Label"></asp:Label><br />
<asp:Label ID="lblEnumPref" runat="server" Text="Label"></asp:Label><br />
<asp:ScriptManager ID="ScriptManager1" runat="server">
</asp:ScriptManager>
<asp:UpdatePanel ID="UpdatePanel1" runat="server">
<ContentTemplate>
    <asp:TextBox ID="txtAjax" runat="server"></asp:TextBox>
    <asp:Button ID="btnAjax" runat="server" Text="PostAJAX" /><br />
    <asp:Label ID="lblAjax" runat="server" Text="AJAX post here"></asp:Label>
</ContentTemplate>
</asp:UpdatePanel>
<asp:TextBox ID="txtPostBack" runat="server"></asp:TextBox>
<asp:Button ID="btnPostBack" runat="server" Text="PostBack" /><br />
<asp:Label ID="lblPostBack" runat="server" Text="PostBack content
here"></asp:Label>
```

5. Modify the page load method so that text box entries are displayed in the label. The source code for the page load method will look something like the following:

```
protected void Page_Load(object sender, EventArgs e)
{
    lblBooleanPref.Text = "Checkbox Pref: " + _boolPref;
    lblStringPref.Text = "Text Pref: " + _stringPref;
    lblEnumPref.Text = "Dropdown Pref: " + _enumPref;

    lblAjax.Text = txtAjax.Text;
    lblPostBack.Text = txtPostBack.Text;
}
```

6. Test that the code compiles before continuing. (You can also register the control in an aspx page in your Visual Studio project to test that it is working. See the Visual Studio documentation for details.)

7. Replace the <installDir>\wsrpdefault\portlets\TestPreferences.ascx file with the latest version.
8. Open the TestPreferences.ascx file in a text editor and remove the `asp:ScriptManager` control. The Oracle WebCenter WSRP Producer for .NET references an ASP.NET Master Page that registers a ScriptManager, and ASP.NET does not allow more than one ScriptManager per application. See the Microsoft documentation on Master Pages and ScriptManager for more information.
9. Replace the compiled assembly in the <installDir>\wsrpdefault\bin folder.
10. Return to your portal, refresh the portlet and test its functionality again.

## 5.2.1 Managing AJAX Outside the .NET Framework

There may be times when you want to control XMLHttpRequests directly, rather than rely on the ASP.NET 3.5 AJAX controls. To do this, you must account for the fact that URLs are transformed via the WSRP proxy. This tutorial provides the steps necessary to get a simple AJAX project working.

This example starts with the code from the previous example. Under the `asp:Label` in the previous sample, add the following code:

```
<!-- Added for simple AJAX sample -->
<br />
<asp:ListBox ID="listBoxPets" runat="server">
  <asp:ListItem Text="cat" Value="cat" Selected="True"/>
  <asp:ListItem Text="dog" Value="dog" />
  <asp:ListItem Text="bird" Value="bird" />
  <asp:ListItem Text="fish" Value="fish" />
</asp:ListBox>
<!-- This href URL will be properly transformed by WSRP proxy -->
<a id="hiddenposturl" href="AjaxPostDestination.aspx" visible="false" ></a>
<br />
<!-- Result of selection will be placed here -->
<div id="AjaxResponse"></div>
```

This code constructs a simple list box with a hidden href that points at the URL to which the XMLHttpRequest will send data. This URL is placed in an anchor href so that the markup transformer will rewrite the URL for the WSRP proxy. (For details on transformation, see [Section 5.5, "Using Markup Transformation"](#).)

---

**Note:** In this sample, there are no URLs returned in the response. However, you may need the response from the AJAX request to be transformed by the Portlet Content Transformation rulesets (for example, if you have URLs you want proxied by the WSRP consumer). To do this, add a "handle" query string argument to the target URL that references the handle you gave the portlet in `wsrp-producer.xml`. In this sample, the handle would be "TestPreferences" so the hidden URL would be changed to `<a id="hiddenposturl" href="AjaxPostDestination.aspx?handle=TestPreferences" visible="false" ></a>`. You must also make sure that the Content Type returned is `text/html` (it is `text/plain` in this sample) or certain WSRP consumers will not properly proxy the transformed URLs. For details on rulesets, see [Section 2.2, "Portlet Content Transformation Rulesets."](#)

---

Under the <div> add the following javascript:

```
<script language="javascript" type="text/javascript">
    var xmlhttp;
    /* Tap into the onchange event so that whenever an item is selected in the
    list box, that value is sent to the server.
    */
    var selectmenu;
    var selectMenus = getElementsByTagNameAndEndingId("select", "listBoxPets");
    selectmenu = selectMenus[0];
    selectmenu.onchange = function() {
        // Prepare the XHR
        createXMLHttpRequest();
        // Get the selected value
        var selectedPet = getSelectedPet();
        // get the URL from a hidden argument since this will be transformed.
        var hiddenPetURL = getElementsByTagNameAndEndingId("a", "hiddenposturl");
        // Prepare the request.
        xmlhttp.open("POST", hiddenPetURL, true);
        // Assign this to a function that will process the requested items
        xmlhttp.onreadystatechange = handleStateChange;
        // Important note - If you use application/x-www-form-urlencoded you must
include the ;charset=UTF-8 or
        // will not work in Firefox 3.x. Works fine in all versions of IE.
        xmlhttp.setRequestHeader("Content-Type",
"application/x-www-form-urlencoded; charset=UTF-8");
        // Send the value as post parameters. This is the suggested methodology
        // using the Oracle WebCenter WSRP Producer for .NET
        xmlhttp.send("petsselection=" + selectedPet);
    }

    /*
    Standard AJAX method. This creates the appropriate XMLHttpRequest
    (XHR) object, the core of AJAX.
    */
    function createXMLHttpRequest() {
        if (window.ActiveXObject) {
            xmlhttp = new ActiveXObject("Microsoft.XMLHTTP");
        }
        else {
            xmlhttp = new XMLHttpRequest();
        }
    }

    /*
    This function handles the results of the XMLHttpRequest (XHR).
    This is part of the standard AJAX methodology of using the onreadystatechange
    event of the XHR to manage the results.
    */
    function handleStateChange() {
        if (xmlhttp.readyState == 4) {
            if (xmlhttp.status == 200) {
                parseResults();
            }
        }
    }

    /*
    This helper function grabs the first selection and returns it
    */
    function getSelectedPet() {
```



```

    var result = "";
    var options = selectmenu.childNodes;
    var option = null;
    for (var i = 0; i < options.length; i++) {
        option = options[i];
        if (option.selected) {
            result = option.value;
        }
    }
    return result;
}

/*
Write out the results returned from the XHR POST
*/
function parseResults() {
    //var responseDiv = document.getElementById
("WebPartManager1_AjaxWebPart2_PetsServerResponse");
    var responseDivs = getElementsByTagNameAndEndingId("div", "AjaxResponse");
    var responseDiv = responseDivs[0];
    if (responseDiv.hasChildNodes()) {
        responseDiv.removeChild(responseDiv.childNodes[0]);
    }
    var responseText = document.createTextNode(xmlHttp.responseText);
    responseDiv.appendChild(responseText);
}

/*
This function returns a list of DOM elements that have the tag name specified
and have an ID that ends in the value supplied. The reason for this function is
that ASP.NET prepends control ID's with the webpart zone name and this function
provides a handy way of locating the our control of interest.
tagName - DOM tag name to look for (e.g. div, select, p)
endingID - String that the ID of the DOM elements should end with
returns - list of DOM elements that have the tag name and have an id that ends
with value supplied
*/
function getElementsByTagNameAndEndingId(tagName, endingId) {
    var tagItems = document.getElementsByTagName(tagName);
    var idValue;
    var idNode;
    var startPos;
    var returnElements = new Array(1); // Typically only one item
    var j = 0;
    for (i = 0; i < tagItems.length; i++) {
        idNode = tagItems.item(i).attributes.getNamedItem("id");
        if (idNode != null) {
            idValue = idNode.nodeValue;
            startPos = idValue.indexOf(endingId);
            if (startPos > -1 && endingId == idValue.substring(startPos)) {
                returnElements[j] = tagItems.item(i);
                j++;
            }
        }
    }
    return returnElements;
}
}
</script>

```

The javascript above simply takes the value of a selected listbox item, passes it as a POST parameter to an URL, and then takes the response text and places it in a div. This is mostly standard AJAX methodology with two exceptions. The first is that the URL is grabbed from a hidden href so it will be properly transformed to a WSRP proxied URL. The second is that the URLs cannot contain query string parameters (like most AJAX requests) because they will not be properly appended by the WSRP consumer.

Create the target page that the AJAX request will be sent to by creating a new ASPX page called `AjaxPostDestination.aspx` in the same directory as `test.aspx`. Paste the following code into the file:

```
<%@ Page Language="C#" AutoEventWireup="true" ValidateRequest="false" %>
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN"
"http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">
<html xmlns="http://www.w3.org/1999/xhtml">
<!-- NOTE that validateRequest is set to false. This is the only way our
hand-rolled AJAX requests will be accepted. -->
<head id="Head1" runat="server">
  <title>Untitled Page</title>
  <script language="CS" runat="server">
    void Page_Load(object sender, System.EventArgs e){}
    protected override void Render(HtmlTextWriter writer)
    {
      // Take over the response writer and send only the results of the selection
      // Turn cacheability off so that each request is viewed as "new"
      Response.Cache.SetCacheability(HttpCacheability.NoCache);
      // For this simple example, just send back plain text. A more
      sophisticated JSON or XML response could be set here.
      Response.ContentType = "text/plain";
      writer.Write("You selected " + Request.Params["petsselection"]);
    }
  </script>
</head>
<body>
  <form id="form1" runat="server">
    <div>

    </div>
  </form>
</body>
</html>
```

Note that the Master Page is not referenced; it would serve no purpose since that page is not displayed. Also note that the `ValidateRequest` attribute is set to "false". ASP.NET would throw a validation error without this attribute because the form is not being posted as expected (with more than a single parameter). Finally, note that caching is turned off. Since a query string parameter such as `datetime` cannot be added to the request, there is no way to make it unique.

Refresh the page where the portlet resides. The portlet should now display a list box with four pets listed in it. When you click on a pet name, you should see the pet selection displayed at the bottom of the portlet.

In summary, to use `XMLHttpRequest` in your code without using ASP.NET 3.5 AJAX controls, follow the rules below:

- Put the target URL for an `XMLHttpRequest` in a hidden anchor tag as an href (or use some other place like a hidden input field) and then grab the value of that href as the target URL to send in the `XMLHttpRequest`.

- If you need the response from the AJAX request to be transformed by the Portlet Content Transformation rulesets (for example, you have URLs you want proxied by the WSRP consumer) add a "handle" query string argument to the target URL that references the handle you gave the portlet in `wsrp-producer.xml`. For details on rulesets, see [Section 2.2, "Portlet Content Transformation Rulesets."](#)
- Do not use querystring parameters as a way of posting data. Use POST parameters only.
- Turn off caching in your target page so the request is not cached.

## 5.3 Adding an ASP.NET Application

If your portlet does not use preferences, you can use the Oracle WebCenter WSRP Producer for .NET to surface an ASP.NET application with WSRP. This tutorial adds an ASP.NET Web Form to the Oracle WebCenter WSRP Producer for .NET.

1. Create a very simple ASP.NET web form. For example, the `test.aspx` file below prints "Hello World" in an ASP.NET label control:

```
<%@ Page Language="C#" AutoEventWireup="true" %>
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN"
"http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">
<html xmlns="http://www.w3.org/1999/xhtml" >
<head runat="server">
  <script language="CS" runat="server">
    void Page_Load(object sender, System.EventArgs e)
    {
      this.lblTest.Text = "Hello World";
    }
  </script>
  <title>Untitled Page</title>
</head>
<body>
  <form id="form1" runat="server">
    <div>
      <asp:Label ID="lblTest" runat="server" Text=""></asp:Label>
    </div>
  </form>
</body>
</html>
```

2. Create a folder under `<installdir>\wsrpdefault\portlets` called "testASPX".
3. Copy the `test.aspx` file you created to the new folder.
4. Modify the `aspx` file to reference the Oracle WebCenter WSRP Producer for .NET Master Page as follows.

---

**Note:** It is important to understand that the Oracle WebCenter WSRP Producer for .NET uses a Master Page to render content. Your `aspx` file must reference the appropriate content placeholders of the Master Page as outlined below.

---

- Remove all DOM elements outside of the `<head>` and `<body>`.
- Replace the `<head>` element with the content placeholder identified by "wsrphead" and include any necessary child elements from the `<head>` element.

```
<asp:Content ID="ContentHead1" ContentPlaceHolderID="wsrphead"
Runat="Server">
```

- Replace the `<body>` and `<form>` elements with the content placeholder identified by "Main" and include any necessary child elements from the `<form>` element.

```
<asp:Content ID="ContentBody1" ContentPlaceHolderID="Main" Runat="Server">
```

For example, a modified test.aspx file would look something like the following:

```
<%@ Page Language="C#"
MasterPageFile="~/portlets/Resources/MasterPages/WSRP.Master" Title="Content
Page Test" %>
<asp:Content ID="ContentHead1" ContentPlaceHolderID="wsrphead" Runat="Server">
<script language="CS" runat="server">
    void Page_Load(object sender, System.EventArgs e)
    {
        this.lblTest.Text = "Hello World";
    }
</script>
</asp:Content>
<asp:Content ID="ContentBody1" ContentPlaceHolderID="Main" Runat="Server">
<asp:Label ID="lblTest" runat="server" Text=""></asp:Label>
</asp:Content>
```

5. Create a new `<portlet>` entry in `wsrp-producer.xml` with a portlet handle named "testASPX". Remove the `<portlet-mode>` element for `wsrp:edit` since Web Forms do not support preferences.
6. Add the new "testASPX" portlet to your portal. You should see "Hello World" displayed.

In the above example, the C# code was placed directly in the file. If you want to use a code-behind .cs file, simply add that code to an `\App_Code` subfolder under `<installdir>\wsrpdefault` or add the compiled C# assembly to `<installdir>\wsrpdefault\bin`, and change the `<%@ Page` directive in the .aspx file to reference the assembly or class.

## 5.4 Adding a Help Page

To add a help file for any portlet, simply add a new `<portlet-mode>` element named `wsrp:help` that points to the help file. For example, to add a help file called `testASPXhelp.htm` to the previous example, the `<portlet-modes>` element would look like the following:

```
<portlet-modes>
  <portlet-mode>
    <name>wsrp:view</name>
    <url>/portlets/TestASPX/test.aspx</url>
  </portlet-mode>
  <portlet-mode>
    <name>wsrp:help</name>
    <url>/portlets/TestASPX/testASPXhelp.htm</url>
  </portlet-mode>
</portlet-modes>
```

When you view the portlet in your consumer portal, the help link for the portlet should bring you to the `testASPXhelp.htm` page.

## 5.5 Using Markup Transformation

The Oracle WebCenter WSRP Producer for .NET allows you to implement markup transformation to modify URLs and other static content before it is displayed in the browser.

### 5.5.1 Transforming Text

This tutorial provides a simplified example that modifies the "Hello World" text in [Section 5.3, "Adding an ASP.NET Application"](#) to read "Hello New World".

1. Open the `<installdir>\wsrpdefault\wsrp-producer.xml` file in a text editor.
2. Go to the `<portlet>` node with the handle "TestASPX" and add the following below the `<RuleSetRef>` element:

```
<RewriterConfig>
  <Rules>
    <RewriterRule>
      <LookFor>Hello World</LookFor>
      <ChangeToAbsolute>>false</ChangeToAbsolute>
      <ChangeTo>Hello New World</ChangeTo>
      <ApplyTo>*</ApplyTo>
      <MakeResource>>false</MakeResource>
    </RewriterRule>
  </Rules>
</RewriterConfig>
```

For details on ruleset elements in `wsrp-producer.xml`, see [Section 2.2, "Portlet Content Transformation Rulesets."](#)

3. Refresh the portal page that includes the testASPX portlet. The portlet should now display "Hello New World".

### 5.5.2 Creating a Custom Ruleset

This tutorial illustrates custom URL transformation by modifying the portlet from [Section 5.2, "Adding a Web Part with ASP.NET AJAX Controls"](#) to proxy the `WebResource.axd` and `ScriptResource.axd` files generated by the .NET framework when ASP.NET AJAX controls are added. (The Default ruleset defined at the top of the `wsrp-producer.xml` file ensures that URLs to web resource files generated by the .NET framework (\*.axd) are made absolute, but are not proxied as WSRP resources. The practical reason for proxying .axd files would be a scenario in which WSRP consumer portal users are not able to access URLs in your internal network.)

1. Open the `<installdir>\wsrpdefault\wsrp-producer.xml` file in a text editor.
2. Copy the entire Default ruleset (`<RuleSet id="Default">`) and rename the id to "axdproxy".
3. Locate the first `<RewriterRule>` in the new ruleset. In the `<ApplyTo>` element, add ", .axd".
4. Locate the second and third `<RewriterRule>` elements and remove ", .axd" from the `<ApplyTo>` elements under each.
5. Make a copy of the third `<RewriterRule>` (with `<LookFor>(src=\\")'` ). Change the `<ApplyTo>` element to include only ".axd" and change `<MakeResource>` to true.

The finished ruleset should look something like the following:

```

<RuleSet id="axdproxy">
  <RewriterConfig>
    <Rules>
      <RewriterRule>
        <LookFor>(href="\") ([^\"]+)</LookFor>
        <ChangeToAbsolute>true</ChangeToAbsolute>
        <ApplyTo>.aspx, .htm, .html, .axd</ApplyTo>
        <MakeResource>true</MakeResource>
      </RewriterRule>
      <RewriterRule>
        <LookFor>(href="\") ([^\"]+)</LookFor>
        <ChangeToAbsolute>true</ChangeToAbsolute>
        <ApplyTo>.css</ApplyTo>
        <MakeResource>>false</MakeResource>
      </RewriterRule>
      <RewriterRule>
        <LookFor>(src="\") ([^\"]+)</LookFor>
        <ChangeToAbsolute>true</ChangeToAbsolute>
        <ApplyTo>.css, .js, .img, .png, .jpg, .gif</ApplyTo>
        <MakeResource>>false</MakeResource>
      </RewriterRule>
      <RewriterRule>
        <LookFor>(src="\") ([^\"]+)</LookFor>
        <ChangeToAbsolute>true</ChangeToAbsolute>
        <ApplyTo>.axd</ApplyTo>
        <MakeResource>true</MakeResource>
      </RewriterRule>
    </Rules>
  </RewriterConfig>
</RuleSet>

```

6. Go to the `<portlet>` node with the handle `TestPreferences` and change the `<RuleSetRef>` element to reference the new `axdproxy` ruleset (`<RuleSetRef>axdproxy</RuleSetRef>`).
7. Save your changes to `wsrp-producer.xml`.
8. Refresh the portal page the includes the `TestPreferences` portlet. All URLs with `.axd` should now be proxied by the WSRP consumer portal. To confirm this, use a DOM inspection tool to search for `.axd` files; they will be transformed to a URL-encoded value that begins with the URL to the WSRP consumer portal. To compare these URLs with un-proxied URLs, simply switch the `<RuleSetRef>` for the portlet back to "Default".

## 5.6 Using Portlet Styles

The Oracle WebCenter WSRP Producer for .NET does not require any special steps to apply skins and themes. Styles, themes, and skin management are delegated to the .NET framework. For example, to apply a particular Oracle WebCenter Portal theme, simply place the source `.css` file in the `\App_Themes` folder and follow standard .NET rules to apply the style you want to a single control, a single portlet, or a set of portlets.

This simplified tutorial shows how to use built-in ASP.NET functionality to apply a style to all labels in all portlets. For more detailed information, see the Microsoft documentation on ASP.NET themes and skins.

1. Create a folder in `<installdir>\wsrpdefault\App_Themes` and name it "MyTheme".

2. Create a new file that contains the following line:  

```
<asp:Label runat="server" ForeColor="white" BackColor="green" />
```
3. Save the file in the \MyTheme folder as "my.skin".
4. Open the <installdir>\wsrpdefault\Web.config file in a text editor.
5. Locate the <pages> element and add the following attribute:  
theme="MyTheme". This will make all ASP.NET pages use the themes defined in the "App\_Themes\MyTheme" folder.
6. View any portlets that contain a label (for example, the portlets in the previous tutorials) and note that the background color is now green.

## 5.7 Using Interportlet Communication with JavaScript

The most direct way to pass data from one portlet to another is to use JavaScript. This tutorial shows a simple technique that uses one portlet as a "master" portlet from which a user selects an item. When an item is selected, data is passed to another portlet, which displays detailed information about the item.

First, create the "master" portlet. In Visual Studio, as part of a Web Application Project, create a new Web User Control and name it **MasterList.ascx**. For ease of deployment, do not put code in a separate file.

Add a label and a list box, but leave the file empty. The contents of the file should look like the following:

```
<%@ Control Language="C#" AutoEventWireup="true" %>
<asp:Label ID="lblHousingType" runat="server" Text="Select House
Type"></asp:Label>
<br/>
<asp:ListBox ID="listBoxHousing" runat="server" Height="80px" Width="171px">
  <asp:ListItem>Single Family</asp:ListItem>
  <asp:ListItem>Condominium</asp:ListItem>
  <asp:ListItem>Cooperative</asp:ListItem>
  <asp:ListItem>Tenancy in Common</asp:ListItem>
</asp:ListBox>
<script runat="server">
  protected void Page_Load(object sender, EventArgs e)
  {
  }
</script>
```

Add the following JavaScript at the bottom of the file:

```
<script type="text/javascript" language="javascript" >
// Set up an onchange event for listBoxHousing.
//This can also be done by adding onChange attribute to the asp:ListBox
var selectmenu;
var selectMenus = getElementsByTagNameAndEndingId("select", "listBoxHousing");
selectmenu = selectMenus[0];
selectmenu.onchange=function()
{
  // Update a hidden field in another portlet. This is how information will be
  passed
  // From one portlet to another.
  var i = selectmenu.selectedIndex;
  var text = selectmenu[i].value;
  var portletFrame = getFrameFromSrcAttribute(window.parent.document,
```

```

"DetailPage");
    var portletContent = portletFrame.contentWindow;
    portletContent.theForm.submitHousingField.value= text;
    portletContent.theForm.submit();
}

/*
This function returns a list of DOM elements that have the tag name specified and
have an ID that ends in the value supplied. The reason for this function is that
ASP.NET prepends control ID's with the webpart zone name and this function
provides a handy way of locating the our control of interest.
    tagName - DOM tag name to look for (e.g. div, select, p)
    endingID - String that the ID of the DOM elements should end with
    returns - list of DOM elements that have the tag name and have an id that ends
with value supplied
*/
function getElementsByTagNameAndEndingId(tagName, endingId) {
    var tagItems = document.getElementsByTagName(tagName);
    var idValue;
    var idNode;
    var startPos;
    var returnElements = new Array(1); // Typically only one item
    var j = 0;
    for (i = 0; i < tagItems.length; i++) {
        idNode = tagItems.item(i).attributes.getNamedItem("id");
        if (idNode != null) {
            idValue = idNode.nodeValue;
            startPos = idValue.indexOf(endingId);
            if (startPos > -1 && endingId == idValue.substring(startPos)) {
                returnElements[j] = tagItems.item(i);
                j++;
            }
        }
    }
    return returnElements;
}

/* This function finds an iframe based on the src element
docSource - document element to search in for frame
srcSearch - string value that should be searched for in an iframe's src field
returns - iframe element
*/
function getFrameFromSrcAttribute(docSource, srcSearch) {
    var iFrames = docSource.getElementsByTagName("iframe");
    var srcNode;
    var srcValue;
    var returnFrame;
    for (i = 0; i < iFrames.length; i++) {
        srcNode = iFrames.item(i).attributes.getNamedItem("src");
        if (srcNode != null) {
            srcValue = srcNode.nodeValue;
            startPos = srcValue.indexOf(srcSearch);
            if (srcValue.indexOf(srcSearch) > -1) {
                returnFrame = iFrames.item(i);
            }
        }
    }
    return returnFrame;
}
</script>

```



The code above takes the item selected from the listbox (a select DOM element), locates the "detail" portlet, and writes a value to a hidden field. The most important part of this code is how the second portlet is located by looking for the iframe that contains it based on text in the "src" attribute that uniquely identifies it. (In this sample, the unique identifier is the folder name under which the portlet will be placed, "DetailPage".)

The next step is to create the "detail" portlet. In Visual Studio, as part of a Web Application Project, create a new Web User Control and name it DetailPage.ascx. For ease of deployment, do not put code in a separate file. Add two ASP.NET labels and a hidden input field. The hidden field is where data from the "master" portlet will be placed. The contents of the file should look like the following:

```
<%@ Control Language="C#" AutoEventWireup="true" %>
<asp:Label ID="lblHousing" runat="server" Text="Housing Type Info:"></asp:Label>
<br/>
<asp:Label ID="lblHousingTypeInfo" runat="server" Text="None
selected"></asp:Label>
<!-- Use a hidden field to get data from another portlet -->
<input type="hidden" id="submitHousingField" name="submitHousingField" value=""/>
```

Add the following code to the bottom of the file.

```
<script runat="server">
protected void Page_Load(object sender, EventArgs e)
{
    if (Request.Params != null)
    {
        if (Request.Params["submitHousingField"] != null)
        {
            string housingType = Request.Params["submitHousingField"].ToString();
            // You'd probably look this up in a database in a real case, but simple switch
            statement used for simplicity
            switch (housingType)
            {
                case "Single Family":
                {
                    lblHousingTypeInfo.Text = "Single family homes consist of a structure and
the land.";
                    break;
                }
                case "Condominium":
                {
                    lblHousingTypeInfo.Text = "You own a condo, but the building housing the
condominium is maintained by the home owners association.";
                    break;
                }
                case "Cooperative":
                {
                    lblHousingTypeInfo.Text = "In a Cooperative, you own shares in the
corporation that owns the entire building.";
                    break;
                }
                case "Tenancy in Common":
                {
                    lblHousingTypeInfo.Text = "In a TIC, you own a share of the mortgage on the
entire building.";
                    break;
                }
                default:
                {
```

```

        lblHousingTypeInfo.Text = "Unrecognized housing type selected.";
        break;
    }
}
}
}
}
</script>

```

The code above writes out values to the label based upon what is passed in a form parameter from the hidden input field. If you look back at the MasterList.ascx file, you will see that it populates a hidden input field called "submitHousingField". (In a real implementation, the detail data would be taken from a database rather than hard-coded.)

The next set of steps set up the two Web User Controls you created in the previous steps and surfaces them as portlets using the Oracle WebCenter WSRP Producer for .NET.

1. Create the following folder: <installdir>\wsrpdefault\portlets\MasterList. Add a new file to the folder called default.aspx that contains the following code:

```

<%@ Page Language="C#"
MasterPageFile="~/portlets/Resources/MasterPages/WSRP.Master" Title="Content
Page Test" %>
<%@ Register src= "~/portlets/MasterList/UserControl/MasterList.ascx"
tagname="MasterList" tagprefix="uc1" %>
<asp:Content ID="Content1" ContentPlaceHolderID="webpartcontrol"
Runat="Server">
    <uc1:MasterList ID="MasterList1" runat="server" />
</asp:Content>

```

2. Create the following folder: <installdir>\wsrpdefault\portlets\MasterList\UserControl and copy the MasterList.ascx file that you created to this folder.
3. Create the following folder: <installdir>\wsrpdefault\portlets\DetailPage. Add a new file to the folder called default.aspx that contains the following code:

```

<%@ Page Language="C#"
MasterPageFile="~/portlets/Resources/MasterPages/WSRP.Master" Title="Content
Page Test" %>
<%@ Register src= "~/portlets/DetailPage/UserControl/DetailPage.ascx"
tagname="DetailPage" tagprefix="uc1" %>
<asp:Content ID="Content1" ContentPlaceHolderID="webpartcontrol"
Runat="Server">
    <uc1:DetailPage ID="DetailPage1" runat="server" />
</asp:Content>

```

4. Create the following folder: <installdir>\wsrpdefault\portlets\DetailPage\UserControl and copy the DetailPage.ascx file that you created to this folder.
5. Open <installdir>\wsrpdefault\wsrp-producer.xml in a text editor and add the following <portlet> elements to it. (For more information about the configuration file, see [Chapter 3, "Managing Required Script Files."](#))

```

<portlet>
  <handle>HousingType</handle>
  <supported-locale>en</supported-locale>
  <descriptions>
    <description lang="en">Housing Type</description>
  </descriptions>
</portlet>

```

```

</descriptions>
<display-names>
  <display-name lang="en">Housing Type</display-name>
</display-names>
<titles>
  <title lang="en">Housing Type</title>
</titles>
<short-titles>
  <short-title lang="en">Housing Type</short-title>
</short-titles>
<supports>
  <portlet-modes>
    <portlet-mode>
      <name>wsrp:view</name>
      <url>/portlets/MasterList/default.aspx</url>
    </portlet-mode>
  </portlet-modes>
  <mime-type>text/html</mime-type>
</supports>
</portlet>

<portlet>
  <handle>HousingDetail</handle>
  <supported-locale>en</supported-locale>
  <descriptions>
    <description lang="en">Housing Detail</description>
  </descriptions>
  <display-names>
    <display-name lang="en">Housing Detail</display-name>
  </display-names>
  <titles>
    <title lang="en">Housing Detail</title>
  </titles>
  <short-titles>
    <short-title lang="en">Housing Detail</short-title>
  </short-titles>
  <supports>
    <portlet-modes>
      <portlet-mode>
        <name>wsrp:view</name>
        <url>/portlets/DetailPage/default.aspx</url>
      </portlet-mode>
    </portlet-modes>
    <mime-type>text/html</mime-type>
  </supports>
</portlet>

```

6. Register the Oracle WebCenter WSRP Producer for .NET by pointing your WSRP consumer at the WSDL URL that is in the shortcut Start | Programs | Oracle WebCenter WSRP Producer for .NET | WSRP 1.0 WSDL. (Refer to the product documentation for your WSRP consumer portal for details on how to register a WSRP producer WSDL.)
7. Add the "HousingType" and "HousingDetail" portlets (these are the names defined in the `wsrp-producer.xml` file) to a single page in your portal. Whenever you click on a housing type in one portlet, details about the housing type should appear in the other portlet.

This tutorial shows just one simple way that you can add interportlet communication functionality to portlets.

## 5.8 Adding User Profile Data

This tutorial creates a Web Part that uses user profile data. The Web Part is created as a class that inherits from `System.Web.UI.WebControls.WebParts.WebPart`. You could also create a Web User Control to perform the same function. See the Microsoft documentation for more details on both options.

---

---

**IMPORTANT:** This note is very important for any WSRP consumer that uses preferences as defined in the WSRP specification (including Oracle WebCenter Portal).

ASP.NET supports only one level of nesting for profile properties (properties can only be nested under a `<group>`), but many of the `UserProfile` items defined in the specification are nested several levels deep. For example, a user's business email would be defined as `businessInfo/online/email` and a user's home mobile phone extension would be defined as `homeInfo/telecom/mobile/number` in the WSRP specification. To account for this, the Oracle WebCenter WSRP Producer for .NET uses the "\_" character as a replacement for nested objects. This is shown in the steps that follow where `businessInfo/online/email` is treated as `businessInfo_online.email` in the C# code, but referenced in `Web.config` as:

```
<group name="businessInfo_online">
  <add name="email" defaultValue="John.Doe@acme.com" />
</group>
```

This issue does not apply to Oracle WebLogic Portal because it follows the same single level of nesting rules as ASP.NET.

---

---

1. Create a new C# class in Visual Studio and copy in the following code:

```
using System;
using System.Collections.Generic;
using System.Collections;
using System.Linq;
using System.Text;
using System.Configuration;

using System.Web;
using System.Web.Profile;
using System.Web.UI;
using System.Web.UI.HtmlControls;
using System.Web.UI.WebControls;
using System.Web.UI.WebControls.WebParts;

namespace TestUserProfile
{
    public class UserProfileWebPart : WebPart
    {
        Label lblEmailWLP;
        Label lblEmailWSRP;
        protected override void CreateChildControls()
        {
            // Create a label and assign a user profile value. Try the WLP
            // format and then the standard WSRP format.
        }
    }
}
```

```

        lblEmailWLP = new Label();
        lblEmailWLP.ID = "lblEmailWLP";
        lblEmailWLP.Text = "WLP profile email: " +
this.Context.Profile["GroupSpace.email"].ToString();
        this.Controls.Add(lblEmailWLP);
        HtmlGenericControl br1 = new HtmlGenericControl("br");
        this.Controls.Add(br1);

        lblEmailWSRP = new Label();
        lblEmailWSRP.ID = "lblEmailWSRP";
        lblEmailWSRP.Text = "WSRP profile email: " +
this.Context.Profile["businessInfo_online.email"].ToString();
        this.Controls.Add(lblEmailWSRP);
        HtmlGenericControl br2 = new HtmlGenericControl("br");
        this.Controls.Add(br2);
    }
}
}

```

2. Compile this code into an assembly called "TestUserProfile" and copy the assembly to <installdir>\wsrpdefault\bin.
3. Open <installdir>\wsrpdefault\Web.config and update the profile properties so that those referenced by the code are used. Note that in the C# code, profile properties are specified in group.name format.

Locate the <properties> element and replace it with the following:

```

<properties>
  <group name="businessInfo_online">
    <add name="email" defaultValue="John.Doe@acme.com" />
  </group>
  <group name="GroupSpace">
    <add name="email" defaultValue="John.Doe@acme.com" />
  </group>
</properties>

```

---

**Note:** For this example to work, there must be a default value. In Oracle WebCenter Portal or other WSRP consumers that use the WSRP specification `UserProfile` items the `GroupSpace.email` property will not be available. Oracle WebLogic Portal uses `UserProfile` extensions to pass items, so you could not create a nested `businessInfo/online/email` profile property.

---

4. Create a folder under <installdir>\wsrpdefault\portlets called "TestUserProfile".
5. Copy the default.aspx file from <installdir>\wsrpdefault\portlets\ASPNET\_AJAX\_sample to your new \TestUserProfile folder.
6. Update the <installdir>\wsrpdefault\portlets\TestPreferences\default.aspx file to reference the new TestUserProfile assembly instead of the Simple\_Date\_Time control.
  - Replace "src" with "assembly" and reference the TestUserProfile assembly you created.
  - Replace "tagname" with "namespace" and reference the TestUserProfile namespace used by the class.

- Add the class name after the ":" following the tagprefix under the content placeholder.

The resulting file will look something like the following:

```
<%@ Page Language="C#"
MasterPageFile="~/portlets/Resources/MasterPages/WSRP.Master" Title="Content
Page Test" %>
<%@ Register assembly="TestUserProfile" namespace="TestUserProfile"
tagprefix="uc1" %>
  <asp:Content ID="Content1" ContentPlaceHolderID="webpartcontrol"
Runat="Server">
  <uc1:UserProfileWebPart ID="UserProfileWebPart1" runat="server" />
</asp:Content>
```

7. Update the `<installdir>\wsrpdefault\wsrp-producer.xml` file to include your portlet AND the profile properties you are using.
  - Make a copy of an existing `<portlet>` node and its contents under the `<portlets>` element.
  - Update the handle, display name, description, title, and short title elements for the new portlet.
  - Update the `<url>` node under each of the `<portlet-mode>` elements to point to the new portlet. (The `wsrp:edit` and `wsrp:help` modes are not necessary.)
  - Add the profile properties referenced in the portlet to the `<profile-item>` elements under the `<user-profile>` element.

When finished, the new `<portlet>` node should look like the following:

```
<portlet>
  <handle>TestUserProfile</handle>
  <supported-locale>en,fr</supported-locale>
  <descriptions>
    <description lang="en">Test UserProfile</description>
    <description lang="fr">Test UserProfile</description>
  </descriptions>
  <display-names>
    <display-name lang="en">Test UserProfile</display-name>
    <display-name lang="fr">Test UserProfile</display-name>
  </display-names>
  <titles>
    <title lang="en">Test UserProfile</title>
    <title lang="fr">Test UserProfile</title>
  </titles>
  <short-titles>
    <short-title lang="en">Test UserProfile</short-title>
    <short-title lang="fr">Test UserProfile</short-title>
  </short-titles>
  <supports>
    <portlet-modes>
      <portlet-mode>
        <name>wsrp:view</name>
        <url>/portlets/TestUserProfile/default.aspx</url>
      </portlet-mode>
    </portlet-modes>
    <mime-type>text/html</mime-type>
  </supports>
  <user-profile>
    <profile-item>businessInfo/online/email</profile-item>
```

```

    <profile-item>GroupSpace/email</profile-item>
  </user-profile>
</portlet>

```

8. The portlet should now be available in your WSRP consumer. (You should have already registered the Oracle WebCenter WSRP Producer for .NET as explained in [Section 5.1, "Adding a Web Part as a Portlet."](#)) Add the portlet to your portal. You should see the two labels showing the default values for the profile properties from Web.Config.
9. Configure your WSRP consumer to send the email preference according to your portal documentation.

For Oracle WebLogic Portal, use the steps below. (The default WLP Data Sync has a PropertySet called "GroupSpace" and one of the properties in this PropertySet is called "email".)

- a. Log into the Oracle WebLogic Portal Administration Console.
- b. Select Users, Groups, and Roles | User Management.
- c. Click on the user you have been using to test Web Parts.
- d. Click on the User Profile tab.
- e. Select the GroupSpace PropertySet in the dropdown menu. (If this PropertySet does not exist, create a new PropertySet called "GroupSpace" and populate it with a "Single, Unrestricted" property called "email".)
- f. Edit the "email" property (enter a value).
- g. Log in to Oracle WebLogic Portal with the user you edited and view the UserProfile Web Part portlet to see your changes.

## 5.9 Setting Up Security Tokens

By default, the Oracle WebCenter WSRP Producer for .NET pulls the XML containing a `<wsse:Security>` element defined in a SOAP header and puts it into the `HttpContext.Items` collection. The token will only be available for the duration of the ASP.NET request and is identified by the ASP.NET session ID.

Due to the wide number of possibilities that the WS-Security specification allows for structuring security tokens the Oracle WebCenter WSRP Producer for .NET installation includes the source code for its default security implementation in `<installdir>\wsrpdefault\src`. For the default SecurityTokenManager implementation, see the files in the `\token` subfolder. For the default request filter that is applied specifically for WebCenter Portal WSS 1.0 tokens before the tokens are passed to the default SecurityTokenManager, see the files in the `\util` subfolder.

This section provides several tutorials illustrating how to access security tokens in a number of ways.

- [Section 5.9.1, "Displaying a Token in a Web Part"](#)
- [Section 5.9.2, "Oracle WebLogic Portal with Default SAMLCredentialMapperV2"](#)
- [Section 5.9.3, "Oracle WebLogic Portal with Custom Signing Key"](#)
- [Section 5.9.4, "UNT for Oracle WebLogic Portal"](#)
- [Section 5.9.5, "SAML for Oracle WebCenter Portal"](#)
- [Section 5.9.6, "UNT for Oracle WebCenter Portal"](#)

## 5.9.1 Displaying a Token in a Web Part

This tutorial creates a simple Web Part that displays a security token. The Web Part created is generic enough that it can be used for looking at any type of wsse:security token (including SAML from WLP or UNT from WebCenter Portal). The Web Part is created as a class that inherits from `System.Web.UI.WebControls.WebParts.WebPart` (you could provide the same functionality with a Web User Control).

1. Create a new C# class in Visual Studio. Make sure to add a reference to the WSE assembly component `Microsoft.Web.Services2` or the sample code will not compile. Copy in the following code:

```
using System;
using System.Collections.Generic;
using System.Collections;
using System.Text;
using System.Configuration;

using System.Web;
using System.Web.UI;
using System.Web.UI.HtmlControls;
using System.Web.UI.WebControls;
using System.Web.UI.WebControls.WebParts;
using System.Xml;

using Microsoft.Web.Services2.Security.Tokens;

namespace SecurityTokenWebPart
{
    public class SecurityTokenWebPart : WebPart
    {
        Label lblSamlHeader;
        Label lblUntHeader;
        Label lblSecurityHeader;
        Label lblSamlToken;
        Label lblUntToken;
        Label lblSecurityToken;
        protected override void CreateChildControls()
        {
            // Create text label for SAML token
            lblSamlHeader = new Label();
            lblSamlHeader.ID = "lblSamlHeader";
            lblSamlHeader.Text = "SAML token:";
            this.Controls.Add(lblSamlHeader);
            HtmlGenericControl br1 = new HtmlGenericControl("br");
            this.Controls.Add(br1);

            // Retrieve the SAML security token associated with this session,
            if available
                lblSamlToken = new Label();
                lblSamlToken.ID = "lblSamlToken";
                Object item = HttpContext.Current.Items[Page.Session.SessionID +
                ".SAML_TOKEN"];
                if (item != null)
                {
                    lblSamlToken.Text =
                    HttpUtility.HtmlEncode(HttpUtility.UrlDecode(item.ToString()));
                }
                else
                {
                    lblSamlToken.Text = "SAML token unavailable";
                }
        }
    }
}
```



```

    }
    this.Controls.Add(lblSamlToken);
    HtmlGenericControl br2 = new HtmlGenericControl("br");
    this.Controls.Add(br2);

    // Create text label for UNT token
    lblUntHeader = new Label();
    lblUntHeader.ID = "lblUntHeader";
    lblUntHeader.Text = "UNT token:";
    this.Controls.Add(lblUntHeader);
    HtmlGenericControl br3 = new HtmlGenericControl("br");
    this.Controls.Add(br3);

    // Retrieve the UNT security token associated with this session, if
available
    lblUntToken = new Label();
    lblUntToken.ID = "lblUntToken";
    item = HttpContext.Current.Items[Page.Session.SessionID +
".USERNAME_TOKEN"];
    if (item != null)
    {
        lblUntToken.Text =
HttpUtility.HtmlEncode(HttpUtility.UrlDecode(item.ToString()));
    }
    else
    {
        lblUntToken.Text = "Username token (UNT) unavailable";
    }
    this.Controls.Add(lblUntToken);
    HtmlGenericControl br4 = new HtmlGenericControl("br");
    this.Controls.Add(br4);

    // Create text label for security tokens
    lblSecurityHeader = new Label();
    lblSecurityHeader.ID = "lblSecurityHeader";
    lblSecurityHeader.Text = "Security token(s):";
    this.Controls.Add(lblSecurityHeader);
    HtmlGenericControl br5 = new HtmlGenericControl("br");
    this.Controls.Add(br5);

    // Retrieve all the security tokens associated with this session,
if available
    lblSecurityToken = new Label();
    lblSecurityToken.ID = "lblSecurityToken";
    item = HttpContext.Current.Items[Page.Session.SessionID +
".TOKENS"];
    if (item != null)
    {
        SecurityTokenCollection tokens = item as
SecurityTokenCollection;
        if (tokens.Count > 0)
        {
            foreach (SecurityToken token in tokens)
            {
                XmlElement xe = token.GetXml(new XmlDocument());
                lblSecurityToken.Text +=
HttpUtility.HtmlEncode(xe.OuterXml);
            }
        }
    }

```

```

        else
        {
            lblSecurityToken.Text = "Security token unavailable";
        }
    }
    else
    {
        lblSecurityToken.Text = "Security token unavailable";
    }
    this.Controls.Add(lblSecurityToken);
}
}

```

2. Compile this code into an assembly named "ViewSecurityToken".
3. Copy the assembly into <installdir>\wsrpdefault\bin.
4. Create a folder under <installdir>\wsrpdefault\portlets called "ViewSecurityToken".
5. Copy the default.aspx file from <installdir>\wsrpdefault\portlets\ASPNET\_AJAX\_sample to your new \ViewSecurityToken folder.
6. Update the <installdir>\wsrpdefault\portlets\ViewSecurityToken\default.aspx file to reference the new TestUserProfile assembly instead of the Simple\_Date\_Time control.
  - Replace "src" with "assembly" and reference the ViewSecurityToken assembly you created.
  - Replace "tagname" with "namespace" and reference the SecurityTokenWebPart namespace used by the class.
  - Add the class name after the ":" following the tagprefix under the content placeholder.

The resulting file will look something like the following:

```

<%@ Page Language="C#"
MasterPageFile="~/portlets/Resources/MasterPages/WSRP.Master" Title="Content
Page Test" %>
<%@ Register assembly="ViewSecurityToken" namespace="SecurityTokenWebPart"
tagprefix="uc1" %>
    <asp:Content ID="Content1" ContentPlaceHolderID="webpartcontrol"
Runat="Server">
        <uc1:SecurityTokenWebPart ID="SecurityTokenWebPart1" runat="server" />
    </asp:Content>

```

7. Update the <installdir>\wsrpdefault\wsrp-producer.xml file to include your portlet.
  - Make a copy of an existing <portlet> node and its contents under the <portlets> element.
  - Update the handle, display name, description, title, and short title elements for the new portlet.
  - Update the <url> node under each of the <portlet-mode> elements to point to the new portlet. (The wsrp:edit and wsrp:help modes are not necessary.)

When finished, the new <portlet> node should look like the following:

```

<portlet>
    <handle>ViewSecurityToken</handle>

```

```

<supported-locale>en</supported-locale>
<descriptions>
  <description lang="en">View SecurityToken</description>
</descriptions>
<display-names>
  <display-name lang="en">View SecurityToken</display-name>
</display-names>
<titles>
  <title lang="en">View SecurityToken</title>
</titles>
<short-titles>
  <short-title lang="en">View SecurityToken</short-title>
</short-titles>
<supports>
  <portlet-modes>
    <portlet-mode>
      <name>wsrp:view</name>
      <url>/portlets/ViewSecurityToken/default.aspx</url>
    </portlet-mode>
  </portlet-modes>
  <mime-type>text/html</mime-type>
</supports>
</portlet>

```

8. The portlet should now be available in your WSRP consumer. (You should have already registered the Oracle WebCenter WSRP Producer for .NET as explained in [Section 5.1, "Adding a Web Part as a Portlet."](#)) Add the portlet to your portal. Assuming that you have not set up SAML or UNT tokens you should just see "Security token unavailable" when you view the portlet.

## 5.9.2 Oracle WebLogic Portal with Default SAMLCredentialMapperV2

The Oracle WebCenter WSRP Producer for .NET is configured to request SAML tokens by default. Oracle WebLogic Portal is set up with a SAML Credential Mapper version (SAMLCredentialMapperV2) that is compliant with this version of the Oracle WebCenter WSRP Producer for .NET by default. This tutorial illustrates how to view SAML tokens from Oracle WebLogic Portal.

1. Log in to the Oracle WebLogic Server hosting your Oracle WebLogic Portal.
2. Go to Security Realms | myrealm | Providers | Credential Mapping.
3. Click on SAMLCredentialMapper. (The description should include "Security Assertion Markup Language v1.1" and the version should be "2.0".)
4. Confirm that this is the default setup by clicking the Provider Specific tab and noting that the Signing Key Alias is "wsrpconsumerrsa".
5. Click the Management tab and on the "Relying Party" link named "rp\_00001".
6. Make sure that both Enabled and Sign Assertions are true (they should be true by default).
7. Select **Include Key Info**.
8. Click **Save**.
9. Restart Oracle WebLogic Server (even if WLS indicates a restart is not necessary).
10. Log in to Oracle WebLogic Portal and view the portlet you created [Section 5.9.1, "Displaying a Token in a Web Part."](#) The portlet should display a raw SAML security token.

### 5.9.3 Oracle WebLogic Portal with Custom Signing Key

The previous section used the default "wsrpconsumerrsa" Signing Key Alias. In a typical SAML set up, you would use your own private key to sign SAML assertions. This section explains how to tailor the steps defined in Oracle WebLogic Portal documentation for creating SAML assertions to account for a WSRP producer created by the Oracle WebCenter WSRP Producer for .NET.

When configuring a Relying Party for the Oracle WebCenter WSRP Producer for .NET, follow the guidelines below:

- Create the Relying Party with "WSS/Sender-Vouches". (You can ignore the "Source Site Federation Services" portion of the Oracle WebLogic Portal documentation as long as you are using WSS/Sender-Vouches.)
- Make sure that Sign Assertions and Include Keyinfo are selected.
- If the Relying Party will not use a value of "default" (all parties rely on this SAML credential mapper), be sure to put the full URL to the .asmx file defined in your WSRPService.wsdl.

### 5.9.4 UNT for Oracle WebLogic Portal

This tutorial illustrates how to view UNT tokens with a username and password from Oracle WebLogic Portal. The first two steps make sure the Oracle WebCenter WSRP Producer for .NET is set up to request UNT with username and password when it is registered, and the rest of the steps configure Oracle WebLogic Portal to send UNT tokens with username and password.

1. Open the `<installdir>\wsrpdefault\wsdl\1.0\WSRPService.wsdl` file in a text editor.
2. Replace the `wsp:Policy` element that references `SAMLAuth.xml` with the following:

```
<wsp:Policy s1:Id="UNTAuth.xml">
  <wsp:All>
    <wssp:Identity>
      <wssp:SupportedTokens>
        <wssp:SecurityToken
TokenTypes="http://docs.oasis-open.org/wss/2004/01/oasis-200401-wss-username-token-profile-1.0#UsernameToken">
          <wssp:UsePassword
Type="http://docs.oasis-open.org/wss/2004/01/oasis-200401-wss-username-token-profile-1.0#PasswordText"/>
        </wssp:SecurityToken>
      </wssp:SupportedTokens>
    </wssp:Identity>
  </wsp:All>
</wsp:Policy>
```

3. Open the `<installdir>\wsrpdefault\wsdl\1.0\wsrp_v1_bindings.wsdl` file in a text editor.
4. Replace all instances of "SAMLAuth.xml" with "UNTAuth.xml". You should see the following under the `<wsdl:input>` elements with the names "getMarkup" and "performBlockingInteraction":

```
<wsp:Policy xmlns:wsp="http://schemas.xmlsoap.org/ws/2004/09/policy">
  <wsp:PolicyReference URI="#UNTAuth.xml"/>
</wsp:Policy>
```

---



---

**Note:** The PolicyReference URI value is the #Id of the wsp:Policy defined for UNT in  
 <installdir>\wsrpdefault\wsdl\1.0\WSRPService.wsdl.

---



---

5. Log in to the Oracle WebLogic Server hosting your Oracle WebLogic Portal.
6. Go to Security Realms | myrealm | Credential Mappings.
7. Click **New** and enter settings that point to the markup endpoints. Leave the defaults except the following:
  - Protocol: http
  - Remote Host: <host name> (e.g., myproducer.mycompany.com)
  - Remote Port: <host port> (e.g., 8678)
  - Path: /wsrpdefault/wsdl/1.0/WSRPBaseService.asmx (This is the path after the host and port in the URL. Be sure to begin the path with "/".)
8. Before clicking **Next**, confirm that the values are correct. You should get a response from http://<host name>:<host port>/wsrpdefault/wsdl/1.0/WSRPBaseService.asmx.
9. Click **Next**.
10. Enter user information:
  - Local user: <A user registered with Oracle WebLogic Server, for example, the "weblogic" user>
  - Remote user: testuser <The user to send to the producer when the "Local user" is logged in>
  - Remote password: testpassword <The password to send to the producer when the "Local user" is logged in>
11. Click **Finish**.
12. Restart Oracle WebLogic Server (even if WLS indicates a restart is not necessary).
13. Register your producer with Oracle WebLogic Portal under a new name so that portlets now ask for UNT tokens instead of SAML tokens.
  1. Log in to the Oracle WebLogic Portal administration console and remove the portlet you registered in [Section 5.9.1, "Displaying a Token in a Web Part."](#)
  2. Create a new WSRP producer in the administration console pointing to the same WSRPService.wsdl you used to register the first portlet.
  3. Add the same portlet again.
  4. Log in to Oracle WebLogic Portal with the "Local user" you entered in the Credential Mapper and view the portlet. The portlet should display a raw UNT security token.

## 5.9.5 SAML for Oracle WebCenter Portal

There are several different SAML token profiles supported by Oracle WebLogic Portal. The Oracle WebCenter WSRP Producer for .NET supports all of the WSS 1.0 options, but does not support WSS 1.1. This tutorial uses the SAML profile that is the most similar to the default provided by WLP (see [Section 5.9.3, "Oracle WebLogic Portal with Custom Signing Key"](#)), WSS 1.0 SAML Token with Message Identity. See the

Oracle WebCenter Portal documentation on securing a WSRP producer for details on the security token options available.

This tutorial describes the process for setting up this token profile in Enterprise Manager. If you register WSRP producers using WLST, register your producer with the `SAML_TOKEN_WITH_MSG_INTEGRITY` token type and other arguments that correspond to Enterprise Manager settings described below. You should already have completed the tutorial in [Section 5.9.1, "Displaying a Token in a Web Part"](#).

1. Create a private key pair on the Oracle WebCenter Portal host machine using the `java keytool`. Set the key algorithm to "rsa" and the key size to 1024. Refer to WebCenter Portal or Java documentation on generating key pairs. (An example command is `C:\Oracle\Middleware\jdk160_20\bin\keytool -genkeypair -keystore C:\Oracle\Middleware\keystores\mykeystore.jks -storepass mykeystorepass -keyalg rsa -keysize 1024 -alias wckey -keypass wckeypass`.)
2. In Enterprise Manager, go to the **Add New Portlet Producer** page and select **WSRP Producer**.
3. Enter the URL to the same WSDL you used in [Section 5.9.1, "Displaying a Token in a Web Part"](#).
4. In the security section, select the token profile **WSS 1.0 SAML Token with Message Integrity**.
5. Choose the **custom** option and define an Issuer Name. This can be any name.
6. Enter values in the **Keystore** section of the page based on the values you used to generate the key with the keytool. (Leave the encryption key values empty; they are not required because encryption is not used.)

Keystore value	Keytool argument
Store Path	-keystore
Password	-storepass
Signature Key Alias	-keyalias
Signature Key Password	-keypass

7. Once the producer is registered, add the `ViewSecurityToken` portlet to a WebCenter Portal space. If you are logged in (not anonymous) to WebCenter Portal, the portlet should show a SAML token with your user name in the Assertion.

---

**Note on SAML with Message Protection:** If you choose to use WSS 1.0 SAML with Message Protection, you must create a private key in the Windows certificate store and import a public key certificate into the java keystore on your WebCenter Portal: Spaces host machine. Once you have imported the certificate, enter the keyalias you used during the keytool import command as the **Recipient Alias**. This way the imported certificate will be used to encrypt the message to the producer.

The process for managing the windows certificate store is explained in the next section, [Section 5.9.6, "UNT for Oracle WebCenter Portal"](#). The steps are the same for SAML, except you must select the WSS 1.0 SAML with Message Protection option instead of WSS 1.0 Username Token with Password.

---

## 5.9.6 UNT for Oracle WebCenter Portal

There are two different Username token (UNT) profiles supported by Oracle WebCenter Portal. The Oracle WebCenter WSRP Producer for .NET supports both of these options. This tutorial describes working with the UNT profile that is the most similar to the default provided by Oracle WebLogic Portal (see [Section 5.9.4, "UNT for Oracle WebLogic Portal"](#)), *WSS 1.0 Username Token with Password*. See the Oracle WebCenter Portal documentation on securing a WSRP producer for more details on the security token options available.

This tutorial describes the process for setting up this token profile in Enterprise Manager. If you register WSRP producers using WLST, register your producer with the `USERNAME_WITH_PASSWORD` token type and other arguments that correspond to Enterprise Manager settings described below. You should already have completed the tutorial in [Section 5.9.1, "Displaying a Token in a Web Part"](#).

1. Add a private key in the Windows certificate store on the Windows machine hosting the Oracle WebCenter WSRP Producer for .NET. The following steps show you how to create a private key in LocalMachine\TrustedPeople Store and LocalMachine\Personal Store. Refer to your Microsoft documentation for more information on the Windows certificate store.
  - a. Locate the `makecert.exe` tool. If this tool is not present, download the Microsoft Windows SDK for Windows and .NET Framework 3.5 SP1.
  - b. Open a command window that has the `makecert.exe` PATH dependencies available. If Visual Studio 2008 is present, you can launch a Visual Studio 2008 Command Prompt from the Start Menu. If the Windows SDK is present, you can launch a command shell from under the Microsoft Windows SDK folder in the Start Menu.
  - c. Create a certificate with the algorithm set to sha1. An example command is: `makecert.exe -a sha1 -n CN=DotNetWSRPProducer -sr LocalMachine -ss My -sky exchange -sk DotNetWSRPProducer`.
2. Import the key certificate into the TrustedPeople Store and Personal Store of the Windows certificate store. Use the same command window where you ran `makecert.exe` to run `certmgr.exe`. An example command is: `certmgr.exe -add -c -n DotNetWSRPProducer -s -r LocalMachine My -s -r LocalMachine TrustedPeople`
3. Grant security rights to the certificate for the user running the ASP.NET processes for the IIS application running the Oracle WebCenter WSRP Producer for .NET (by default this is the Network Service user).

- If you installed the administrator version of WSE 2.0 SP3, use the X509 certificate tool available in the Start Menu, open the certificate from the correct store, view the key file properties, and make sure Network Service has full control.
  - If you do not have the X509 certificate tool, you can still set proper permissions on the certificate you created by going to %SystemDrive%\ProgramData\Microsoft\Crypto\RSA\MachineKeys, finding the most recent file (these are system files so you must configure Windows Explorer to show hidden files), and granting the Network Service user full control.
4. Locate the certificate in the store.
    - a. Bring up mmc.exe from the command line.
    - b. From the menu bar, select File | Add/Remove Snap-in.
    - c. Select certificates.
    - d. Select Computer Account (to view the LocalMachine contents).
    - e. Go to the Personal section of the store and locate the certificate you added.
  5. Export the certificate.
    - a. Right-click on your certificate and select All Tasks | Export...
    - b. In the wizard that pops up, export the public key as a DER encoded binary (DER is X509 format that java keytool likes) with a file name of your choice (e.g. dnaakey.der).
  6. Copy the .der file over to the WebCenter Portal: Spaces server and import the key using the java key tool. An example command is: `C:\Oracle\Middleware\jdk160_20\bin\keytool -genkeypair -keystore C:\Oracle\Middleware\keystores\mykeystore.jks -import -storepass mykeystorepass -keyalg rsa -keysize 1024 -alias dnaakey -keypass dnaakeypass -file C:\Oracle\Middleware\keystores\dnaakey.der`
  7. Create a private key pair on the Oracle WebCenter Portal host machine using the java keytool. Set the key algorithm to "rsa" and the key size to 1024. If you already completed [Section 5.9.5, "SAML for Oracle WebCenter Portal,"](#) use the same key for this tutorial. Refer to your WebCenter Portal or Java documentation on generating key pairs. An example command is: `C:\Oracle\Middleware\jdk160_20\bin\keytool -genkeypair -keystore C:\Oracle\Middleware\keystores\mykeystore.jks -storepass mykeystorepass -keyalg rsa -keysize 1024 -alias wckey -keypass wckeypass`
  8. In Enterprise Manager, go to the **Add New Portlet Producer** page and select **WSRP Producer**.
  9. Enter the URL to the same WSDL you used in [Section 5.9.1, "Displaying a Token in a Web Part."](#)
  10. In the security section, select the token profile **WSS 1.0 Username Token with Password**.
  11. Choose the **custom** option.
  12. In the **Associated External Application** section choose **Create New...** You will be brought to a new page where you can create a new external application. Give the application a name and click OK. This tells WebCenter Portal to prompt end users to enter the login credentials they want to pass to the WSRP producer portlet.



13. Once you are returned to the Add New Portlet Producer page, enter values in the **Keystore** section of the page based on the values you used to generate the key with the keytool. (Leave the encryption key values empty; they are not required because encryption is not used.)

Keystore value	Keytool argument
Store Path	-keystore
Password	-storepass
Signature Key Alias	-keyalias
Signature Key Password	-keypass
Recipient Alias (Note: This value comes from importing the certificate (step 6), not generating the key.)	-keyalias

14. Once the producer is registered, add the ViewSecurityToken portlet to a WebCenter Portal space. The first time you view the portlet you should see an "Update login information" link. Click this link and provide a user name and password. This will be the user name and password that is sent to the portlet in the Username and password token (UNT). Once you enter this information the portlet should show a token with the user name and password you entered.

## 5.10 Using Oracle WebCenter Portal Features

The following features are included specifically for Oracle WebCenter Portal. Since these features are based on WSRP standards there is a possibility they could be applied to any WSRP consumer.

### 5.10.1 Using Customization in Oracle WebCenter Portal

This tutorial shows how to enable the Customize option for Web Parts surfaced in an Oracle WebCenter Portal space. This example starts with the "TestPreferences" portlet described in [Section 5.1, "Adding a Web Part as a Portlet."](#)

Open `<installdir>\wsrpdefault\wsrp-producer.xml` in a text editor. Locate the TestPreferences portlet and add a new `<portlet-mode>` section under the `<portlet-modes>` element with a name of `urn:javax:portlet:mode:custom:edit_defaults`. The `<supports>` element for the portlet with the new value should look something like the following:

```
<supports>
  <portlet-modes>
    <portlet-mode>
      <name>wsrp:view</name>
      <url>/portlets/TestPreferences/default.aspx</url>
    </portlet-mode>
    <portlet-mode>
      <name>wsrp:edit</name>
      <url>/portlets/TestPreferences/default.aspx</url>
    </portlet-mode>
  </portlet-modes>
</supports>
```

```

    <name>urn:javafx:portlet:mode:custom:edit_defaults</name>
    <url>/portlets/TestPreferences/default.aspx</url>
  </portlet-mode>
</portlet-modes>
<mime-type>text/html</mime-type>
</supports>

```

Add the TestPreferences portlet to a WebCenter Portal space, and while in Oracle Composer, select the Customize option (wrench icon).

## 5.10.2 Using Oracle WebCenter Portal Parameters

Oracle WebCenter Portal parameters are passed to WSRP 2.0 producers using the navigationalParameters defined in the WSRP 2.0 specification. This tutorial shows how to pass WebCenter Portal parameters to a portlet.

In Visual Studio, open the TestPreferences.aspx Web User Control you created in [Section 5.1, "Adding a Web Part as a Portlet"](#). Add two labels called lblParameter1 and lblParameter2 to the bottom of the form.

```

<br />
<asp:Label ID="lblParameter1" runat="server" Text=""></asp:Label><br>
<asp:Label ID="lblParameter2" runat="server" Text=""></asp:Label>

```

Add the following code to the bottom of the Page\_Load method:

```

Dictionary<string, string> ParameterCollection =
HttpContext.Current.Items["NavigationalParameters"] as Dictionary<string, string>;
lblParameter1.Text = ParameterCollection["TestParameter1"];
lblParameter2.Text = ParameterCollection["TestParameter2"];

```

Test that the code compiles. In particular, make sure that you have System.Collections.Generic referenced. Update your TestPreferences.aspx and TestPreferences.aspx.cs (and designer .cs file if you created one of these) under the App\_Code directory.

The following steps are required to inform the WebCenter Portal WSRP Consumer of the existence of these parameters. Open <installdir>\wsrpdefault\wsrp-producer.xml in a text editor and locate the TestPreferences <portlet> element. Above the <supports> element add the following XML:

```

<navigational-parameters>
  <parameter>
    <identifier>TestParameter1</identifier>
  </parameter>
  <parameter>
    <identifier>TestParameter2</identifier>
  </parameter>
</navigational-parameters>

```

Note that the identifier names match the names pulled from the navigational parameters collection in the Page\_Load method described in an earlier step.

In a WebCenter Portal page, open the WebCenter Portal page editor. Add the TestPreferences portlet and click the Edit button. On the parameters tab you should see the two parameters you defined, TestParameter1 and TestParameter2. Enter a value for each parameter and click Apply and Ok. You should see the values you entered at the bottom of the portlet.

---

---

**Note:** The WebCenter Portal WSRP Consumer only utilizes the identifier portion of the navigationalParameter. However, if you have a different WSRP consumer for which you wish to use navigationParameters you may also assign localized values for the description, label, and hint in your wsrp-producer.xml. For example:

```
<navigational-parameters>
  <parameter>
    <identifier>TestParameter1</identifier>
    <description>
      <parameter-description
lang="en">parameter1-en</parameter-description>
      <parameter-description
lang="fr">parameter1-fr</parameter-description>
    </description>
    <label>
      <parameter-label lang="en">parameter1-label-en</parameter-label>
      <parameter-label lang="fr">parameter1-label-fr</parameter-label>
    </label>
    <hint>
      <parameter-hint lang="en">parameter1-hint-en</parameter-hint>
      <parameter-hint lang="fr">parameter1-hint-fr</parameter-hint>
    </hint>
  </parameter>
</navigational-parameters>
```

---

---

