IBM Integration SupportPac for WebSphere Service Registry and Repository and Microsoft Visual Studio.NET

Installing and configuring the IBM Integration SupportPac for WSRR and Microsoft Visual Studio.NET

The following instructions describe how to install and configure the IBM Integration SupportPac for WSRR and Microsoft Visual Studio.NET in a Microsoft Visual Studio 2012 or Microsoft Visual Studio 2013 environment.

Before you can install and use the IBM Integration SupportPac for WSRR and Microsoft Visual Studio.NET, you must have installed Microsoft Visual Studio 2012 or Microsoft Visual Studio 2013.

Installing the IBM Integration SupportPac for WSRR and Microsoft Visual Studio.NET

The IBM Integration SupportPac for WSRR and Microsoft Visual Studio.NET is packaged in a zip which contains the following directories and files:
- `Licenses`; License agreements to agree to to use this SupportPac.
- `readme.txt`; Brief instructions and feature list for the SupportPac.
- `WSRRPackage.vsix`; the Windows Installer to install the SupportPac for Microsoft Visual Studio.
- `Instructions.doc`; this documentation.

To install the IBM Integration SupportPac for WSRR and Microsoft Visual Studio:
- Double click WSRRPackage.vsix
- Click `Install`.
- Click `Close`.
- Restart Microsoft Visual Studio if Microsoft Visual Studio was open.

Configuring the Microsoft Visual Studio user interface

Before you can use the IBM Integration SupportPac for WSRR and Microsoft Visual Studio.NET to access the objects in WSRR, you must configure it with the connection details that it needs, including any security details for making a secure connection. By default a connection is setup to connect to a local insecure WSRR on port 9080.

To configure the IBM Integration SupportPac for WSRR and Microsoft Visual Studio.NET:
1. Start Microsoft Visual Studio.
2. Select **Tools > Options…** The Options dialog opens.
3. In the Options dialog, expand **WebSphere Service Registry and Repository**, then click **Locations**. The Locations page is displayed.

4. On the Locations page, click **Add**. The **Add a new WSRR location alias** dialog opens.
5. In the dialog, enter your connection details:
   a. In the **Alias Name** field, type a meaningful name for the connection. For example, type the name of the remote computer to which you are connecting.
   b. In the **Description** field, optionally type a natural language description for this alias connection.
   c. In the **Host machine** field, type the fully-qualified name or IP address (IPv4 or IPv6) of the remote computer to which you are connecting. For example, `jiffy.hursley.ibm.com` or `192.168.0.3`
   d. In the **Port** field, type the port number of the WSRR listening port on the host machine for your WSRR (by default, this is 9080 for a non-secured WSRR and 9443 for a secure WSRR).
   e. If security is enabled, you must provide security credentials so that the plug-in can communicate with a secure WSRR. To do this, perform the following actions:
      i. Select **Yes** in the **Secure WSRR?** combo box.
      ii. Provide the **user name** and **password** with which to log in.
      iii. If the WSRR server uses a self-signed SSL certificate, ensure the WSRR server is in the Trusted Root Certificate Authorities certificate store in Windows. See Installing the WSRR server SSL certificate for details.
      iv. Ensure that the host name matches what is specified on the WSRR SSL certificate. For example if the certificate says `jiffy.hursley.ibm.com` then you must enter this hostname exactly. Entering "jiffy" will result in the connection being rejected.
6. Click OK. The new connection is listed on the Locations page of the Options dialog.
7. When an appropriate location is selected as the default, click OK.
   a. To make a particular alias the default connection, double click the row

Uninstalling the Microsoft Visual Studio user interface

Uninstalling the IBM Integration SupportPac for WSRR and Microsoft Visual Studio.NET removes it completely from your Microsoft Visual Studio environment.

To uninstall the IBM Integration SupportPac for WSRR and Microsoft Visual Studio perform the following actions:
1. Start Microsoft Visual Studio.
2. Click `Tools` and `Extension Manager`.
3. Click `IBM WSRR Microsoft Visual Studio Plugin` and click `Uninstall`
4. Restart Microsoft Visual Studio.

Installing the WSRR server SSL certificate

By default a secure WSRR server uses a self-signed SSL certificate. If you have not replaced the certificate with a certificate signed by a certificate authority, you will need to install the WSRR SSL certificate into the Windows Trusted Root Certificate Authorities certificate store.

Perform the following steps:
1. Start Internet Explorer
2. Navigate to the WSRR server Web UI. For example, if you entered `jiffy.hursley.ibm.com` for the host name and 9443 for the port, the URL is https://`jiffy.hursley.ibm.com:9443/ServiceRegistry`
3. When Internet Explorer displays "There is a problem with this website's security certificate" click "Continue to this website (not recommended)."
4. In the address bar, click "Certificate error".
5. Click View Certificates in the Certificate Invalid pop up.
6. In the Certificate dialog, take note of the Issued to: value. This is the host name that must be used to connect to the WSRR server and must be configured in the host name details in the Visual Studio add in. For example, if Issued to: is "jiffy.hursley.ibm.com" then you must configure the host name exactly as "jiffy.hursley.ibm.com".
7. Click the Certification Path tab in the Certificate dialog
8. In the Certification Path area, select the top level certificate. This is the signer certificate. This will have the same host name as the WSRR server.
9. Click View Certificate.
10. Click Install Certificate… in the Certificate dialog for the signer certificate.
11. Click Next in the Certificate Import Wizard welcome page
12. Select Place all certificates in the following store and click Browse
13. Select Trusted Root Certificate Authorities in the Select Certificate Store dialog and click OK
14. Click Next
15. Click Finish
16. In the Security Warning dialog, click Yes.
17. Click OK on the success confirmation dialog.
18. Click OK to dismiss the Certificate dialog for the signer certificate.
19. Click OK to dismiss the Certificate dialog.
20. Restart Microsoft Visual Studio.

Managing services using the IBM Integration SupportPac for WSRR and Microsoft Visual Studio.NET

During development, if you are working in a Microsoft Visual Studio environment, you can use the IBM Integration SupportPac for WSRR and Microsoft Visual Studio.NET that is supplied as a WSRR SupportPac to access and search for documents that are

stored in WSRR. You can also use the IBM Integration SupportPac for WSRR and Microsoft Visual Studio.NET to publish to WSRR documents that you have developed in a Microsoft Visual Studio project.

The IBM Integration SupportPac for WSRR and Microsoft Visual Studio.NET

The IBM Integration SupportPac for WSRR and Microsoft Visual Studio.NET provides a new tool window, the **Service Registry View**, in your Microsoft Visual Studio IDE. You can use the Service Registry View to access and search for objects in WSRR. You can also publish to WSRR new objects that you develop in a Microsoft Visual Studio.

The Service Registry View is supplied in the IBM Integration SupportPac for WSRR and Microsoft Visual Studio.NET, which you can download and install from the WSRR SupportPac website. When you have installed the Microsoft Visual Studio Package for WSRR, you can open the Service Registry View, by selecting **View > Other Windows > IBM WebSphere Service Registry and Repository Microsoft Visual Studio Plugin**.
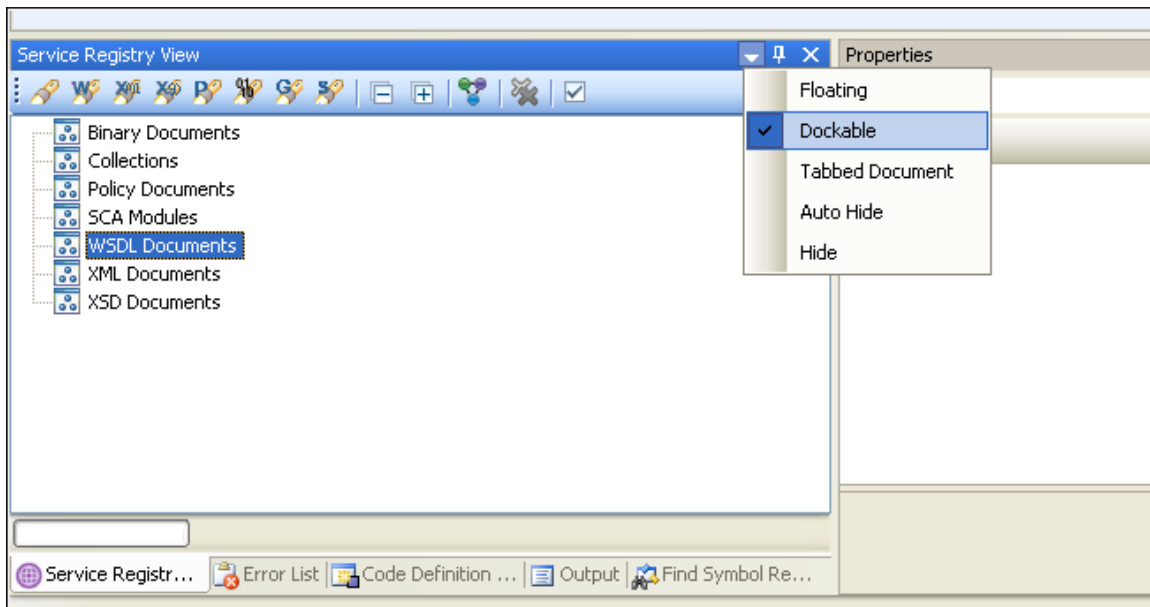
Like other Microsoft Visual Studio Tool windows you can rearrange it anywhere within your Microsoft Visual Studio IDE by choosing **Dockable** from the drop-down menu at the top-right of the window.

The IBM Integration SupportPac for WSRR and Microsoft Visual Studio.NET will connect to a local or remote instance of WebSphere Service Registry and Repository when publishing, searching for or retrieving entities from WSRR. You can use the Service Registry View and the Microsoft Visual Studio Solution Explorer windows to perform the following tasks:

- Search WSRR for entities.

- Import discovered entities from WSRR to a project within your Microsoft Visual Studio Solution Explorer.
- Publish entities to WSRR that you have created in a project within your Microsoft Visual Studio Solution Explorer.
- Add property and relationship information to entities in WSRR.

In addition to name, namespace and version attributes, every entity in WSRR can have any number of custom name-value properties, any number of custom relationships, and belong to a hierarchy of classifications. These pre-defined and user-defined properties and relationships can be viewed in the Microsoft Visual Studio Properties window when an entity is selected in the Service Registry View.

From the Service Registry View, you can search WSRR using one or more of the following criteria:
- Any combination of name, namespace and version.
- The type, or types, of object that you want to retrieve; for example, you can search for XML and WSDL documents.
- One or more properties and property values of the object.
- The classification of the object in WSRR. For each classification that is chosen, you can select whether to search with an exact match or inclusive of child classifications.

The search dialog allows you to search with wildcards (.*) in the values and to perform searches that are not case-sensitive. For each of the key metadata types (properties, relationships and classifications), you can choose more than one and combine them using the logical AND or OR operations.

The search results return zero or more objects depending on how specific the search criteria are.

Searching for objects in WebSphere Service Registry and Repository

You can search for documents and other objects in WebSphere Service Registry and Repository (WSRR) using a combination of different types of criteria.

To search for objects in WSRR:
1. In the Service Registry View, right-click somewhere in the window, then click **Launch Query Wizard**. The **WSRR Search** dialog opens.
2. In the WSRR Search dialog, select the criteria on which you want to search. You must select, as a minimum, the type of object for which you are searching. For example, select the **XSD docs** check box to search for XSD files. The number of results that are returned depends on how specific the criteria are.
3. Click Search. All objects in WSRR that match the search criteria that you specified are displayed in the **Query WSRR** dialog which opens when the search has completed.
4. Click OK to close the Query WSRR dialog.

The retrieved items are added to the appropriate categories of the Service Registry View tool window; for example, if you searched for some XSD documents, the XSD documents that were retrieved are listed under the XSD Documents category in the Service Registry View. If a document imports another document, for example, if a.xsd imported b.xsd then this is displayed as an expandable tree node with a + symbol next to the a.xsd document.

If you want to retrieve all of the objects of a certain type from WSRR, you can quickly do this if you right-click in the Service Registry view, then click the object type that you want to retrieve; for example, to retrieve all the WSDL documents in WSRR, click **Retrieve WSDLs**.

Now, you can import one or more of the retrieved documents into a project in your local workspace.

Selecting on one of the retrieved documents within the Service Registry View window will populate the properties associated with that entity in the Properties window. The properties will be displayed Categorized or in Alphabetical order depending on the user option selected. If Categorized they will be in alphabetical order in up to four different categories;
1. Pre-defined properties,
2. Pre-defined relationships,
3. User-defined properties and
4. User-defined relationships.

Importing documents from WebSphere Service Registry and Repository to a local Microsoft Visual Studio Solution's project

When you have retrieved documents from WebSphere Service Registry and Repository (WSRR), they are displayed in the Service Registry View. You cannot work with the documents, though, until you have imported them into a project in the Microsoft Visual Studio Solution Explorer.

To import documents from WSRR to a project in the Microsoft Visual Studio Solution Explorer:
1. Ensure that you have at least one project available in your Microsoft Visual Studio Solution Explorer window.
2. In the Service Registry View, right-click the document that you want to import, then click **Import document …**. The **Import Document** wizard opens.
3. In the wizard, click the name of the project into which you want to import the document and ensure that the correct file name is shown in the **File name** field.
4. Optional:
    a. To import any objects that depend on the selected document, select the **Include all dependent artifacts/entities** check box.

      b. To allow the plug-in to create the folder location based upon the location property of the entity, select the **Generate folder structure** check box.

      c. When generating the folder structure you can also choose to allow the package to remove any common prefix that may exist in all the location properties by selecting the **Remove common location prefix** check box.

5. Click Finish.

A copy of the document from WSRR is imported into the project in your Solution Explorer window.

Now, you can change or use the document as required.

Publishing documents to WebSphere Service Registry and Repository

When you have developed new documents, or new versions of documents that already exist in WebSphere Service Registry and Repository (WSRR), you can publish them to WSRR using the IBM Integration SupportPac for WSRR and Microsoft Visual Studio.NET.

To publish a document, or a new version of a document, to WSRR:
1. In the Solution Explorer window, right-click the document that you want to publish, then click **Service Registry > Publish as Document(s)**. The **Publish a Document To WSRR** wizard opens.
2. In the wizard, check that the correct name is shown in the **Name** field and the correct document type is shown in the **File type** field.
3. Optional: Type a description in the **Description** field.
4. Optional: If a previous version of the document already exists in WSRR, type a new version number in the **Version** field so that you can distinguish this new version of the document.
5. Use the **Previous** and **Next** buttons to view all the documents that you selected. If you choose to press **Finish** before previewing all documents to ensure that their details are correct, you will receive a warning message saying that you haven't viewed them all.
6. Click **Finish**. When the document has been published to WSRR, a confirmation message is shown.

The document is now stored in WSRR.

Adding properties to objects in WebSphere Service Registry and Repository

You can use the IBM Integration SupportPac for WSRR and Microsoft Visual Studio.NET to add or edit properties to the entities in WebSphere Service Registry and Re-

pository (WSRR) in order to formally describe them and make it easier for other developers to find and reuse them.

All of the objects to which you want to add properties must be in WSRR and must be displayed in the Service Registry View window.

To add properties to, or edit the existing properties of, an object in WSRR, perform the following actions:
1. In the Service Registry View, retrieve the document or documents to which you want to add properties, or whose properties you want to edit. The documents must be displayed in the Service Registry View.
2.
    a. To add properties to one or more entities in a single operation, right-click one or more documents in the Service Registry view, then click **Add Properties**. The **Add Properties** wizard opens.
    b. To edit properties of one entity, right-click one document in the Service Registry View, then click **Edit Properties**. The **Edit Properties** wizard opens.
3. In the relevant wizard, you can add, edit or delete existing properties.
    a. To add a new property, click **Add**. The **Add Property** dialog opens.
    b. To edit an existing property, either double click the property or select one and click **Edit**. The **Edit Property** dialog opens.
    c. To delete an existing property, click **Delete**. The selected property or properties will be removed.
4. In the **Add Property** or **Edit Property** dialog, type a name for a new property that you want to add and type the optional value for the property, then click **OK**.
5. Optional: Add or edit more properties in the same way.
6. Click **Next**. This will display a summary of the documents that will have new properties added to and the list of properties that will be added to each.
7. Click **Finish**. The properties will now be added to, or updated in, the selected documents. The properties of a particular document can be seen in the Properties window; if you open the Properties window and reselect the document in the Service Registry View, you will see the properties in the **User-defined properties** category of the Properties view.

Defining relationships between objects in WebSphere Service Registry and Repository

In WebSphere Service Registry and Repository (WSRR), you can define relationships between documents so that, for example, one document has a named relationship to another document. You can define these relationships using IBM Integration SupportPac for WSRR and Microsoft Visual Studio.NET.

All of the objects between which you want to define relationships must be in WSRR and at least one of the objects must be displayed in the Service Registry View window.

To define relationships between objects in WSRR, perform the following actions:
1. In the Service Registry View, retrieve the document or documents to which you want to add relationships. The documents must be displayed in the Service Registry View.
2.
    a. To edit the relationships of one entity, select it in the Service Registry View, then right-click and choose **Edit Relationships**. The **Edit Relationships** wizard opens.
    b. To add relationships to one or more entities in a single operation, select one or more documents in the Service Registry View, then right-click and choose **Add Relationships**. The **Add Relationships** wizard opens.
3. The wizard will list all the user-defined relationship names with the number of targets for each relationship.
    a. To add a new relationship, perform the following actions:
        i. Click **Add**. The **Add Relationships** wizard opens.
        ii. Specify the name of the relationship that you want to define, then click **Next**. The wizard displays the **WSRR Search** dialog so that you can search for the document or documents to which you want to define the relationship.
        iii. Click **Next**. This will display the results of the search. Check at least one document to which you want to create a relationship from your originally selected document (if no results are found, either click **Back** and re-specify your search criteria, or click **Cancel**).
        iv. You can perform another search by clicking **Back**, and the previously found entities will remain on the results page for you to select.
        v. After you have searched for and selected the target entities of the relationship, click **Finish**.
    b. To remove an existing relationship, select it and choose **Remove**.
4. After adding or removing entities, click **Next** to be shown an overview of the entities that will be updated and the relationships that will be added to or updated on the documents that were selected.
5. Click **Finish**.

The updated relationships will defined between the documents in WSRR. These updated relationships can be seen in the **User-defined relationships** category of the Properties window.

Creating concepts for objects in WebSphere Service Registry and Repository

Concepts are collections of objects stored in WebSphere Service Registry and Repository (WSRR). You can create concepts using the IBM Integration SupportPac for WSRR and Microsoft Visual Studio.NET.

To create a concept in WSRR:
1. In the Service Registry View, select the documents that you wish to group together into a Concept.
2. Right-click the selection, then click **Create as Collection**.
3. In the wizard, type a name, description, and version for the concept, then click **Next**. The **Add Properties** wizard appears.
4. Add, edit or remove properties that will be attached to the new Collection entity (see the add properties section for assistance on doing this), then click **Next**. The **Add Relationships** wizard appears.
5. Add or remove relationships that will be attached to the new Collection entity (See the add relationships section for assistance on doing this), then click **Finish**.

   Note: It is the Add Relationships wizard that allows you to create a new relationship and set the selected documents as targets of that relationship.

6. Click **Finish**. A message confirms that the concept was successfully created.

The concept is now created in WSRR. You can check this by retrieving it using the Service Registry View.

Creating concepts using local documents

Concepts are collections of objects. New objects that are created in a Microsoft Visual Studio Solution project can be grouped together into a collection and published as a new concept into WebSphere® Service Registry and Repository.

This has the same effect as individually publishing a document into the WebSphere Service Registry and Repository and then creating a concept (See the "Creating concepts for objects in WebSphere Service Registry and Repository" section for details). However, you can combine documents from a local project and from the selected WSRR by using the Add Relationship wizard page to set the targets.

Before you can create concepts using local documents, you must have created a document in a project in the Solution Explorer.

To publish a concept using local documents, perform the following actions:
1. In the Solution Explorer window, select and right-click one or more documents, then click **Publish as Collection**. The wizard that opens comes in two parts:
   a. A document preparation wizard, for you to ensure that the attributes for each of the selected documents are correct (name, type and so on). See the

"Publishing documents to WebSphere Service Registry and Repository" section for details.

     b. The collection creation wizard. See the "Creating concepts for objects in WebSphere Service Registry and Repository" section for details.

2. In the document preparation wizard, move through each of the documents and ensure that the attributes are correct for each of them. Then click **Finish**.

3. In the **Create Collection** wizard, type a name, description, and version for the collection, then click **Next**.

4. Add, edit or remove properties that will be attached to the new collection entity (see the add properties section for assistance), then click **Next**. The **Add Relationships** wizard page appears.

5. Add or remove relationships that will be attached to the new collection entity (see the add relationships section for assistance), then click **Finish**.

    Note: It is the Add Relationships wizard that allows you to create a new relationship and set the selected documents as targets of that relationship.

6. Click **Finish**. A message confirms that the concept was successfully created.

The concept is now created in WSRR. You can check this by retrieving it using the Service Registry View.

Limitations

This describes the limitations of the IBM Integration SupportPac for WSRR and Microsoft Visual Studio.NET.

When queries are run against WSRR, the SupportPac downloads document metadata and content. Therefore if a query is run that retrieves many documents, it may take a long time to retrieve the results.

When connecting to a secure WSRR server which is using a self-signed certificate, the PC running the IBM Integration SupportPac for WSRR and Microsoft Visual Studio.NET must have the SSL server certificate of the WSRR server installed into its Trusted Root Certificate Authorities certificate store.

During a WSRR operation or operations a dialog will indicate progress and offer a cancel button. When multiple operations are being processed the cancel button will stop the next operation from being processed, once the current operation has completed. The cancel button has no effect when a single operation is being processed. For example, when searching for WSDL Documents and Concepts, this consists of two operations, when the WSDL Document search is running the cancel button will stop the add in from running the search for Concepts, but will not interrupt the search for WSDL Documents.

The IBM Integration SupportPac for WSRR and Microsoft Visual Studio.NET is only available in the English language.

The IBM Integration SupportPac for WSRR and Microsoft Visual Studio.NET is not accessible. The accessible alternative is use of a web browser to access the WSRR Web UI, or the WSRR Eclipse plug in.