

Using the Eclipse Plug-in

Use the Natural Business Services Eclipse plug-in to perform the following tasks:

- Configure Connections
 - Use the NBS Repositories View
 - Create a Directly Enabled Web Service
 - Create a REQUEST DOCUMENT Client
 - Transform a Browse Module
 - Check Environment Information for a Connection
 - Access CentraSite
 - Export Repository Metadata to XML
 - Set Natural Business Service Preferences
 - Set Web Services Stack Preferences
-

Configure Connections

Before you can use the Natural Business Services Eclipse plug-in, you must configure connections to a remote repository. Since the Natural code (subprograms) used during development may be located in a different Natural environment than what is used during production (runtime), you will define more than one connection. The location of the Natural code is determined by the configuration settings for the connection.

Tip:

To make future Eclipse plug-in upgrades easier, create your configuration file in a neutral location. To do this, select **Create new configuration** in the **Preferences** window. For information, see Set Natural Business Service Preferences.

To create a new connection:

1. Open the context menu for Connections in the **NBS Repositories** view.
2. Select **New**.

The **Create new connection** panel is displayed. For example:

Configure Connection

Create new connection

Enter settings for Broker type connection and select Finish to save

Connection ID:

Type: Broker SPoD

Decimal separator: ▼

Settings Environment Optional

Secure server: Encryption: ▼

Compression: ▼ Kernel security: ▼

Service Parameters

Broker ID: Port:

Service class:

	Server Name	Service
Dispatcher:	<input type="text" value="DISPATCH"/>	<input type="text" value="MAIN"/>
CFactory:	<input type="text" value="CFACTORY"/>	<input type="text" value="MAIN"/>
Attach:	<input type="text" value="ATTACH"/>	<input type="text" value="MAIN"/>
Security:	<input type="text"/>	<input type="text"/>

? Test Finish Cancel

Use this panel to configure connections to the remote repository containing your business services. You can create a new Broker or SPoD connection, as well as specify the separator to use for decimal numbers. This example shows a Broker connection.

This section covers the following topics:

- Add a Broker Connection

- Add a SPoD Connection
- Copy an Existing Connection
- Modify a Connection
- Test a Connection
- Delete a Connection

Add a Broker Connection

A Broker connection uses the EntireX communication protocol to connect to Natural Business Services servers running in Natural. This type of connection is suitable for administering and running business service applications.

Note:

You must use a SPoD connection to create, test, or deploy business services.

Tip:

If you have an existing connection that is similar to the one you want to add, you can copy the connection and then modify it to suit your requirements. For information, see Copy an Existing Connection.

To add a Broker connection:

1. Open the context menu for **Connections** in the **NBS Repositories** view.
2. Select **New**.

The **Create new connection** panel is displayed. For example:

Configure Connection

Create new connection

Enter settings for Broker type connection and select Finish to save

Connection ID:

Type: Broker SPoD

Decimal separator: ▼

Settings Environment Optional

Secure server: Encryption: ▼

Compression: ▼ Kernel security: ▼

Service Parameters

Broker ID: Port:

Service class:

	Server Name	Service
Dispatcher:	<input type="text" value="DISPATCH"/>	<input type="text" value="MAIN"/>
CFactory:	<input type="text" value="CFACTORY"/>	<input type="text" value="MAIN"/>
Attach:	<input type="text" value="ATTACH"/>	<input type="text" value="MAIN"/>
Security:	<input type="text"/>	<input type="text"/>

? Test Finish Cancel

The **Create new connection** panel for a Broker connection contains the following tabs:

Panel Tab	Description
Settings	Defines connections to remote repositories (via the EntireX Communicator or Natural for Windows protocols). Use the Settings tab to view, edit, delete, or add connections. These connections define communication paths and options to remote business service repositories running on a Natural server.
Environment	Defines configuration settings for the environment. This tab is only available for a Broker connection. For information, see Environment Tab.
Optional	Defines optional configuration settings. This tab is only available for a Broker connection. For information, see Optional Tab.

3. Type the name of the connection in **Connection ID**.

This name will be listed in the **NBS Repositories** view and used in code when creating connections to the business services.

4. Select **Broker** in **Type**.
5. Type the broker ID in **Broker ID**.
6. Type the TCP/IP port number the EntireX broker is running on in **Port**.

Note:

If you intend to define the port in your Windows services file, leave this option blank.

Optionally, you can specify the following information:

Option	Description
Secure server	Select this option if the server is running Natural or Natural Business Services security and a password must be transported in the communication buffer. Note: When you select this option, also select Encryption .
Encryption	Select this option to encrypt messages transported to and from the server. This value is based on the EntireX ACI settings for encryption.
Compression	Select this option to compress messages at a specified level. This value is based on the EntireX ACI settings for compression. Note: The higher the level, the more CPU processing is required to compress and decompress the message. As this may end up saving a lot of network bandwidth, it is worth the CPU trade off in most instances.
Kernel security	Select this option to use Broker security for the EntireX server. If you are not sure which security is used, you can leave this setting on Auto . To achieve the best network performance, however, you should select Yes or No .
Server class	EntireX server class defined for your business services. If you do not know this value, ask your Natural Business Services administrator.
Dispatcher, CFactory, Attach, and Security	Timestamp server names of the four Natural Business Services runtime servers. Leave these values as the defaults; only your Natural Business Services administrator should change these values. Note: The Security server name is optional and is defaulted to blank.

You can also define settings on the **Environment** and **Optional** tabs. For information, see Environment Tab and Optional Tab.

Note:

To test the new connection, select **Test**. For more information, see Test a Connection.

7. Select **Finish** to create the new Broker connection.

The new connection is displayed in the

Environment Tab

This tab contains the System Files and Step Libraries tables. For example:

Configure Connection

Create new connection

Enter settings for Broker type connection and select Finish to save

Connection ID:

Type: Broker SPoD

Decimal separator: ▼

Settings Environment Optional

Stow service:

System Files

Name	DBID	FNR
FUSER	0	0
FNAT	0	0
FDIC	0	0
FCST	0	0
FNBS1	0	0
FNBS2	0	0

Step Libraries

Library	DBID	FNR

Test Finish Cancel

To override the current defaults used in the Natural Business Services server environment, supply the connection values in the appropriate table.

Note:

Unless you have a compelling reason to override the defaults, we recommend that you do not change these settings.

Optional Tab

This tab contains optional settings for a Broker connection. For example:

Configure Connection

Create new connection

Enter settings for Broker type connection and select Finish to save

Connection ID:

Type: Broker SPoD

Decimal separator: ▼

Settings Environment **Optional**

Optional

Timeout:

Packet size:

Uppercase credentials:

Description:

Test Finish Cancel

The optional settings for a Broker connection are:

Option	Description
Timeout	Timeout value used by the Natural Business Services dispatcher when making remote service calls. The default is "30S" (30 seconds).
Packet size	Default packet size for communication messages. If you have many business services using interfaces larger than the default (31643 bytes), increase the size of this field. Note: If required, Natural Business Services will increase the size dynamically at runtime, but this will affect performance.
Uppercase credentials	Select this option if the user ID and password must be sent in upper case. Note: This option is not recommended for Natural Business Services server environments running on Unix or Linux.
Description	Brief description of the connection.

Add a SPoD Connection

A SPoD connection uses the Natural Single Point of Development (SPoD) protocol to communicate with the Natural Development Server (NDV) running in a Natural environment that contains Natural Business Services. This type of connection is only suitable for developing and testing Natural Business Services applications.

Tip:

If you have an existing connection that is similar to the one you want to add, you can copy the connection and then modify it to suit your requirements. For information, see [Copy an Existing Connection](#).

To add a SPoD connection:

1. Open the context menu for **Connections** in the **NBS Repositories** view.
2. Select **New**.
3. Type the name of the connection in **Connection ID**.

The connection ID identifies the server component that provides communications between the client and server. This name is listed in the **NBS Repositories** view and used in code when creating connections to business services. All communications are done by connection ID.

4. Select **SPoD** in **Type**.

The **Settings** tab for a SPoD connection is displayed. For example:

Configure Connection

Create new connection
Enter settings for SPoD type connection and select Finish to save

Connection ID:

Type: Broker SPoD

Decimal separator: ▼

Settings

Host name:

Server port:

Optional

Session parameters:

Description:

Test Finish Cancel

5. Specify the following information:

Option	Description
Host name	Name of the server running Natural Development Server (NDV). You may also enter a TCP/IP address.
Server port	TCP/IP port for the NDV server. This value is required. Note: You cannot use the Windows services file to look up this value.
Session parameters	Any session parameters required to connect to your environment. This can be a profile setting, such as PROFILE=NBS52.
Description	Brief description of the connection.

Note:

To test the new connection, select **Test**. For more information, see Test a Connection.

6. Select **Finish** to create the new SPoD connection.

The connection is added to the list of available connections.

Copy an Existing Connection

To save time and effort, you can copy an existing connection (Broker or SPoD) and then modify the settings for your requirements.

To copy an existing connection:

1. Open the context menu for an existing connection in the **NBS Repositories** view.
2. Select **New**.

The settings for the existing connection are displayed. For example:

Configure Connection

Create new from existing connection

Enter settings for Broker type connection and select Finish to save

Connection ID:

Type: Broker SPoD

Decimal separator: ▼

Settings Environment Optional

Secure server: Encryption: ▼

Compression: ▼ Kernel security: ▼

Service Parameters

Broker ID: Port:

Service class:

	Server Name	Service
Dispatcher:	<input type="text" value="DISPATCH"/>	<input type="text" value="MAIN"/>
CFactory:	<input type="text" value="CFACTORY"/>	<input type="text" value="MAIN"/>
Attach:	<input type="text" value="ATTACH"/>	<input type="text" value="MAIN"/>
Security:	<input type="text"/>	<input type="text"/>

Test Finish Cancel

3. Change the settings as required.

For example, change the connection name from *Copy of ConnectionName* to another name.

Note:

To test the new connection, select **Test**. For more information, see [Test a Connection](#).

4. Select **Finish** to save the new connection.

The connection is added to the list of available connections in the **NBS Repositories** view.

Modify a Connection

To modify a connection:

1. Open the context menu for the connection in the **NBS Repositories** view.
2. Select **Configure**.

Tip:

If **Configure** is not available on the context menu, select **Disconnect**. You cannot modify the settings for a connection that is currently connected.

The **Modify connection** panel is displayed. For example:

Configure Connection

Modify connection

Enter settings for SPoD type connection and select Finish to save

Connection ID:

Type: Broker SPoD

Decimal separator: ▼

Settings

Host name:

Server port:

Optional

Session parameters:

Description:

This example shows the settings for a SPoD connection.

3. Modify the settings as desired.

For information on the configuration settings, see:

- Add a Broker Connection
- Add a SPoD Connection

Note:

To test the modified connection, select **Test**. For more information, see Test a Connection.

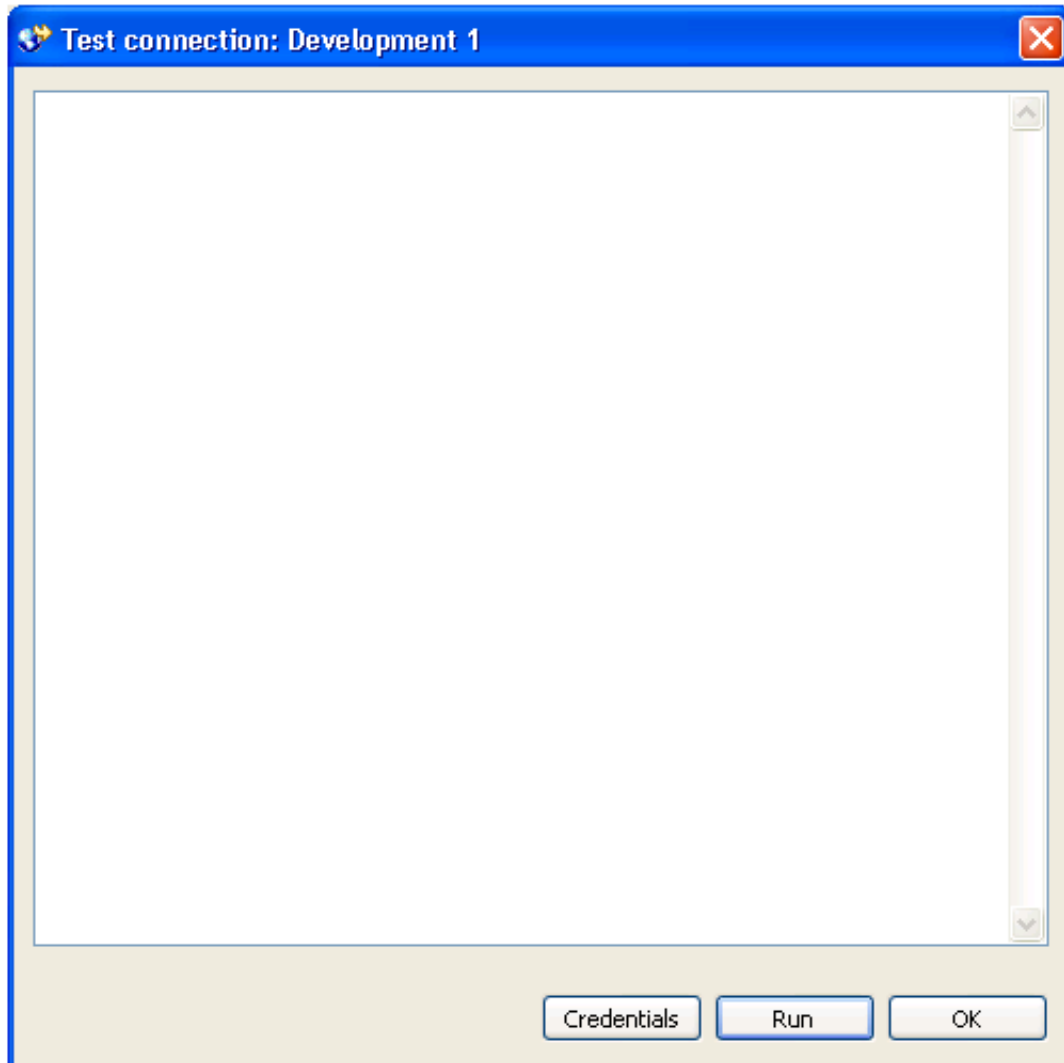
4. Select **Finish** to save the new settings.

Test a Connection

▶ **To test a connection:**

1. Select **Test** on any Connection wizard panel.

The Test connection window is displayed for the selected connection. For example:



2. Select **Run** to test the connection.

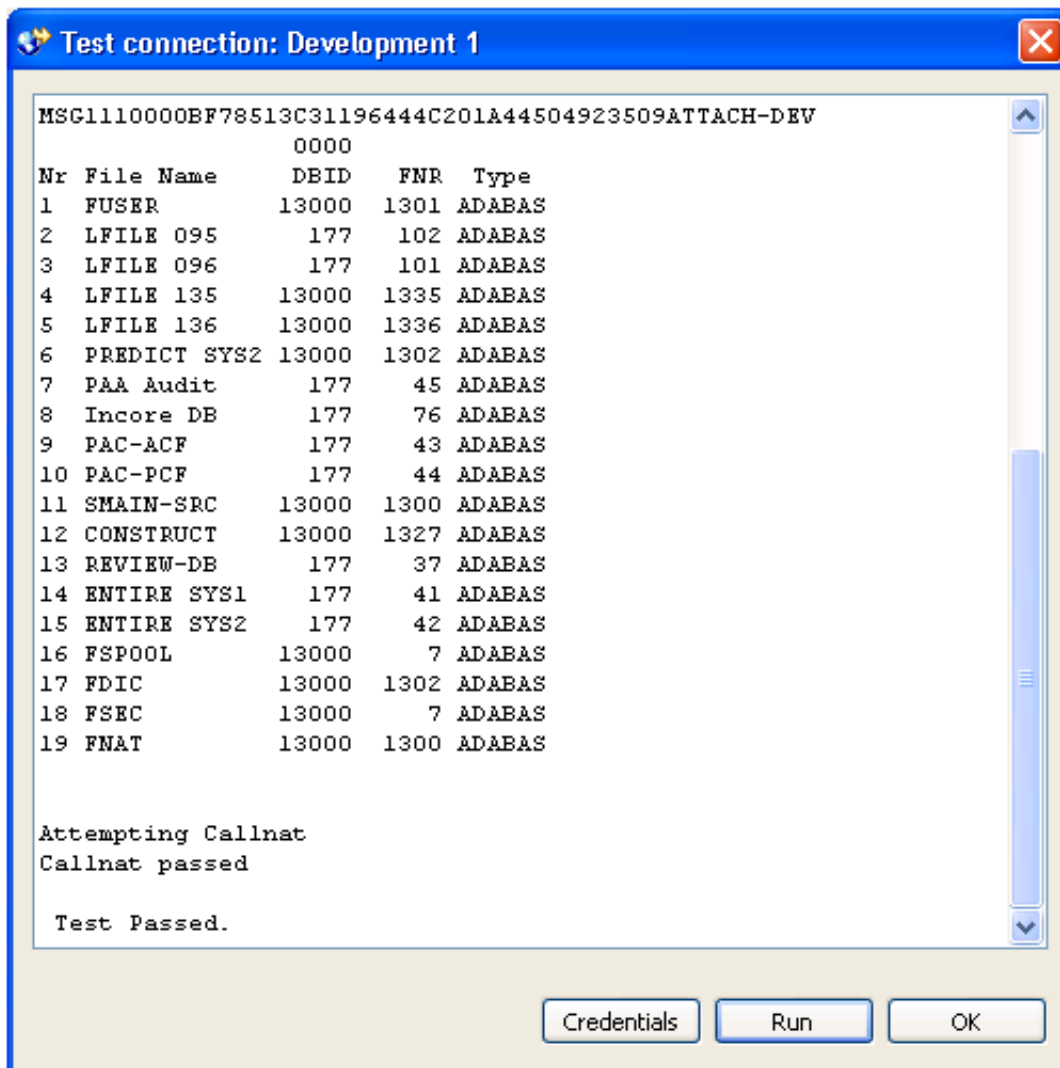
The **Enter User's Credentials** window is displayed.

For a description of this window, see [Access Business Services](#).

3. Type the user ID and password for the connection.

4. Select **OK**.

The results of the test are displayed. For example:



5. Select **OK** to close the test window.

Delete a Connection

▶ To delete a connection:

1. Open the context menu for the connection in the **NBS Repositories** view.
2. Select **Delete**.

A confirmation window is displayed.

3. Select **OK** to delete the connection.

The connection is removed from the list of available connections.

Use the NBS Repositories View

The **NBS Repositories** view lists all defined business service connections in a tree view. You can expand each connection node to display information about each connection. If the Eclipse plug-in has been activated, the **NBS Repositories** view is displayed when you start Eclipse.

Note:

For information on activating the plug-in, see [Activate the Eclipse Plug-in](#).

Use the **NBS Repositories** view to:

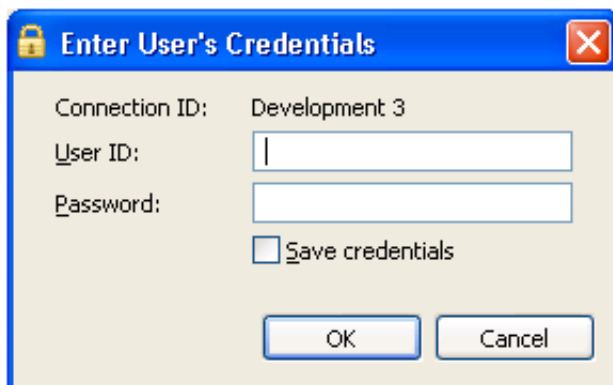
- Access Business Services
- Search for Business Services
- Set Trace and Log Options
- Access Connection Options

Access Business Services

▶ To access the business services:

1. Open the context menu for the connection in the **NBS Repositories** view.
2. Select **Connect**.

The **Enter User's Credentials** window is displayed. For example:



Optionally, you can select **Save credentials** to save your user ID and password for this connection. To remove saved credentials from the security cache when Eclipse shuts down, select one of the following options:

- To clear logon credentials for this connection from the security cache, open the context menu for the connection in the **NBS Repositories** view and select **Clear logon credentials**.
 - To clear logon credentials for all connections, open the context menu for the **Connections** node and select **Clear all logon credentials**.
3. Enter the user ID and password for the connection.

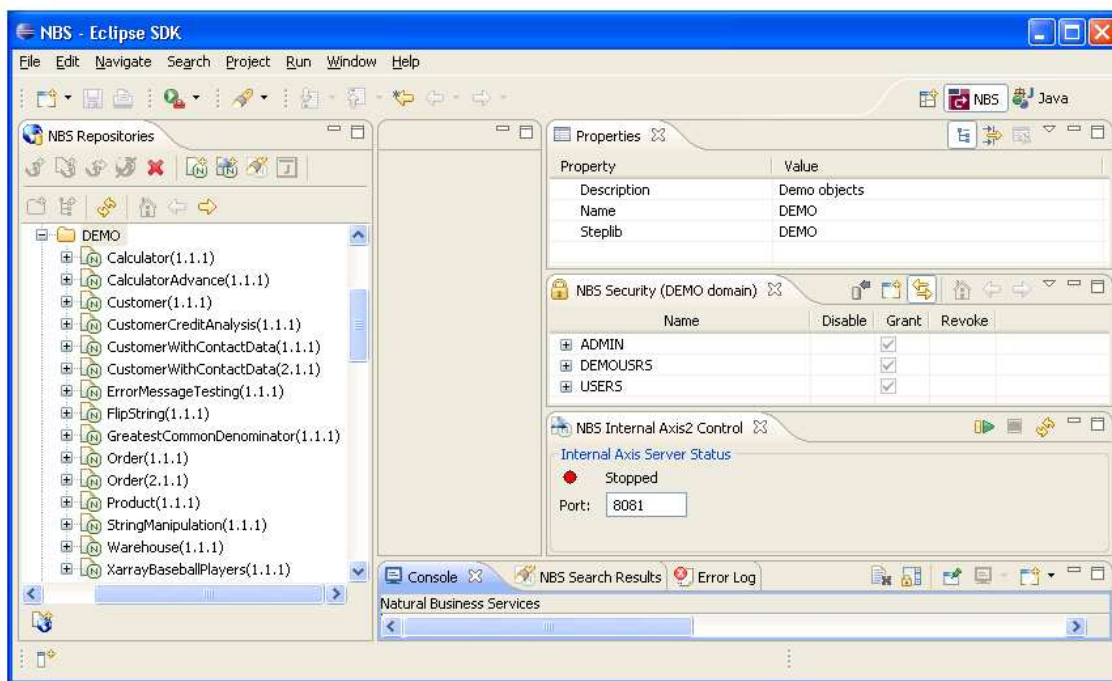
The Natural Business Services server retrieves information for the specified connection.

4. Expand the **Domains** node.

The list of available domains is displayed.

5. Expand the domain containing the business services.

The list of available services is displayed. For example:



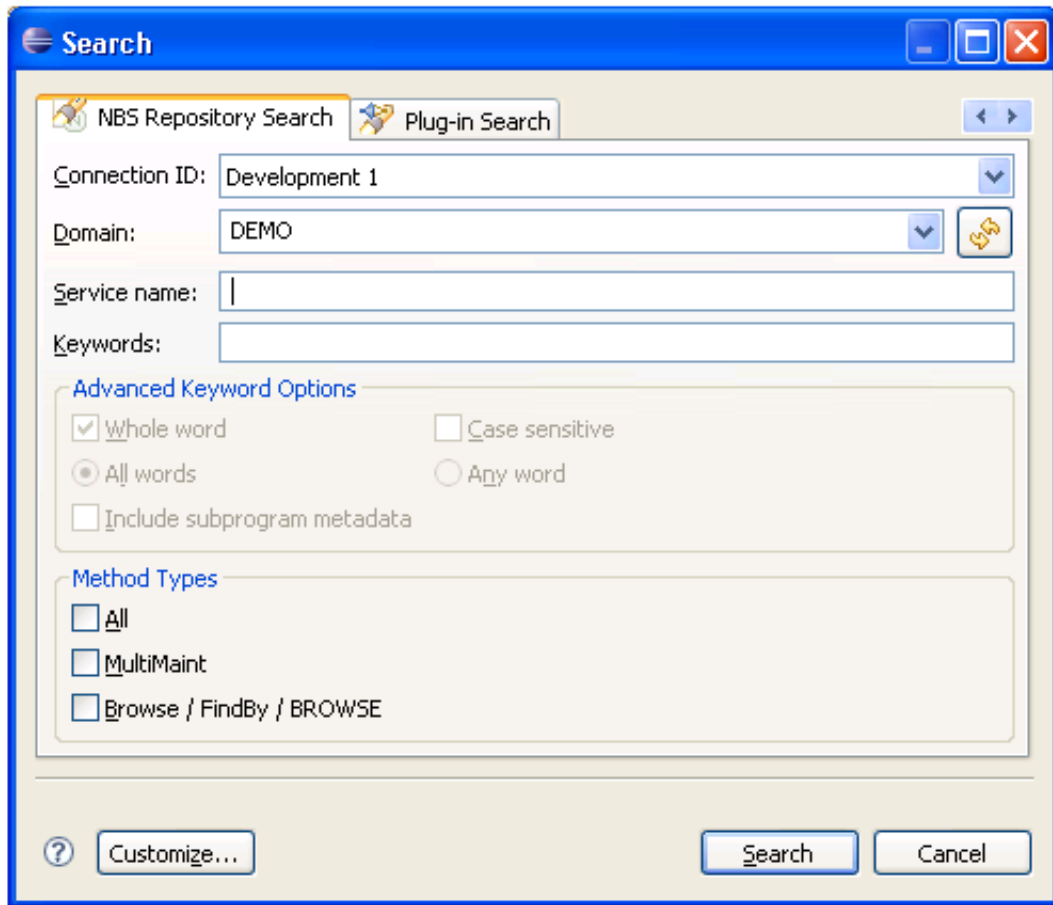
You can also use this window to set trace and log options. For information, see [Set Trace and Log Options](#).

Search for Business Services

▶ To search for all business services within a domain:

1. Open the context menu for the domain in the **NBS Repositories** view.
2. Select **Search for services**.

The **Search** window is displayed for the specified connection and domain. For example:



3. Select **Search**.

Natural Business Services displays the business services in the **NBS Search Results** view. For example:

Domain ▲	Service	Version	Description
DEMO	Calculator	1.1.1	This is a natural subprogram that is used to do simple calculator
DEMO	CalculatorAdva...	1.1.1	Description of subprogram proxy that...
DEMO	Customer	1.1.1	Customer maintenance and retrieval
DEMO	CustomerCredit...	1.1.1	Customer Credit analysis; looks for customers with credit limits
DEMO	CustomerWithC...	1.1.1	Retrieval and Maintenance of Customer with Contacts
DEMO	CustomerWithC...	2.1.1	Retrieves and maintains a set of customers and their contact in
DEMO	ErrorMessageT...	1.1.1	Used to reverse text and trigger Natural error messages for t
DEMO	FlipString	1.1.1	Receives a text string and reverses the order of characters (at
DEMO	GreatestComm...	1.1.1	This subprogram proxy communicates with the module that calc
DEMO	Order	1.1.1	Retrieves orders and maintains an order.
DEMO	Order	2.1.1	Retrieves a set of orders.
DEMO	Product	1.1.1	Product maintenance and retrieval
DEMO	StringManipulation	1.1.1	Manipulates text strings based on various functions in Construc
DEMO	Warehouse	1.1.1	Warehouse maintenance and retrieval
DEMO	XarrayBaseball...	1.1.1	This service demonstrates the use of Xarrays

The **NBS Search Results** view displays the domain and service names, as well as the service version number and description for each service. To change the sort order for **Domain**, **Service**, **Version**, or **Description** in this view, select the corresponding heading. For example, when you select the **Service** heading in the example above, the services are redisplayed in ascending order. The arrow in each heading indicates the sort order:

- ▲ indicates ascending order (A to Z)
- ▼ indicates descending order (Z to A)

You can refine the search results by limiting the search in several ways, such as:

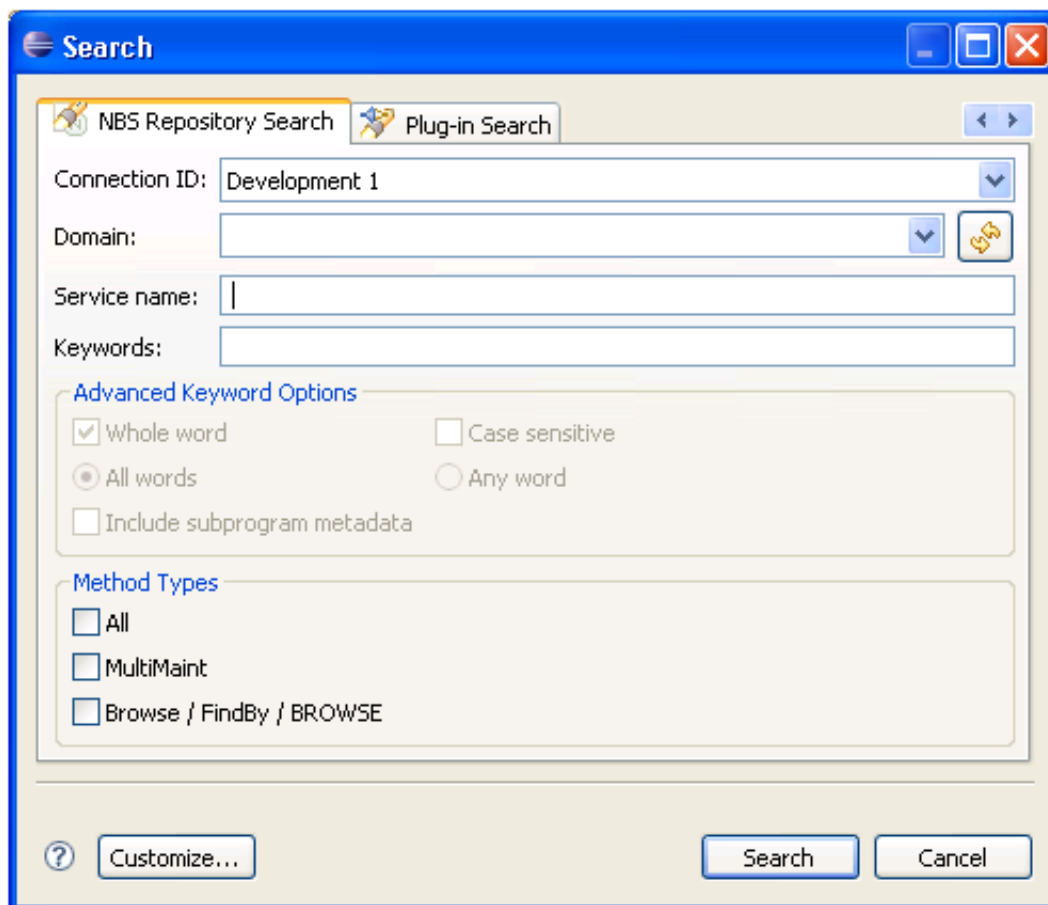
- Search for All Services for a Connection
- Search for Specific Services Within All Domains
- Search for Specific Services within a Domain
- Use Advanced Criteria
- Customize the Search Window

Search for All Services for a Connection

▶ **To search for all business services for a connection:**

1. Open the context menu for the connection in the **NBS Repositories** view.
2. Select **Search for services**.

The **Search** window is displayed for the specified connection. For example:



3. Select **Search**.

All business services for the specified connection are displayed in the **NBS Search Results** view.

Search for Specific Services Within All Domains

▶ **To search for specific business services within all domains:**

1. Open the context menu for the connection in the **NBS Repositories** view.
2. Select **Search for services**.

The **Search** window is displayed.

3. Do one of the following:
 - Type the name of the business service in **Service name** to return a list of all services with that name in all domains

Note:

Ensure you use the correct case for the service name. For example, use “Calculator”, not “calculator”, to search for the Calculator service.

- Type a keyword in **Keywords** to return a list of all services with that name in their descriptions

Note:

You can also use **Advanced Keyword Options** and **Method Types** to limit the search. For information, see Use Advanced Criteria.

4. Select **Search**.

The specified business services are displayed in the **NBS Search Results** view.

Search for Specific Services within a Domain▶ **To search for specific business services within a domain:**

1. Open the context menu for the domain in the **NBS Repositories** view.
2. Select the name of the domain from **Domain**.
3. Select **Search for services**.

The **Search** window is displayed.

4. Do one of the following:

- Type the name of a business service in **Service name** to return a list of all services with that name in the specified domain
- Type a keyword in **Keywords** to return a list of all services with that name in their descriptions

Note:

You can also use **Advanced Keyword Options** and **Method Types** to limit the search. For information, see Use Advanced Criteria.

5. Select **Search**.

The specified business services are displayed in the **NBS Search Results** view. For example, if you enter "Calculator" in **Service name**, the following results are displayed:

Domain	Service	Version	Description
DEMO	Calculator	1.1.1	This is a natural subprogram that is used to do simple calculator
DEMO	CalculatorAdva...	1.1.1	Description of subprogram proxy that...

Use Advanced Criteria

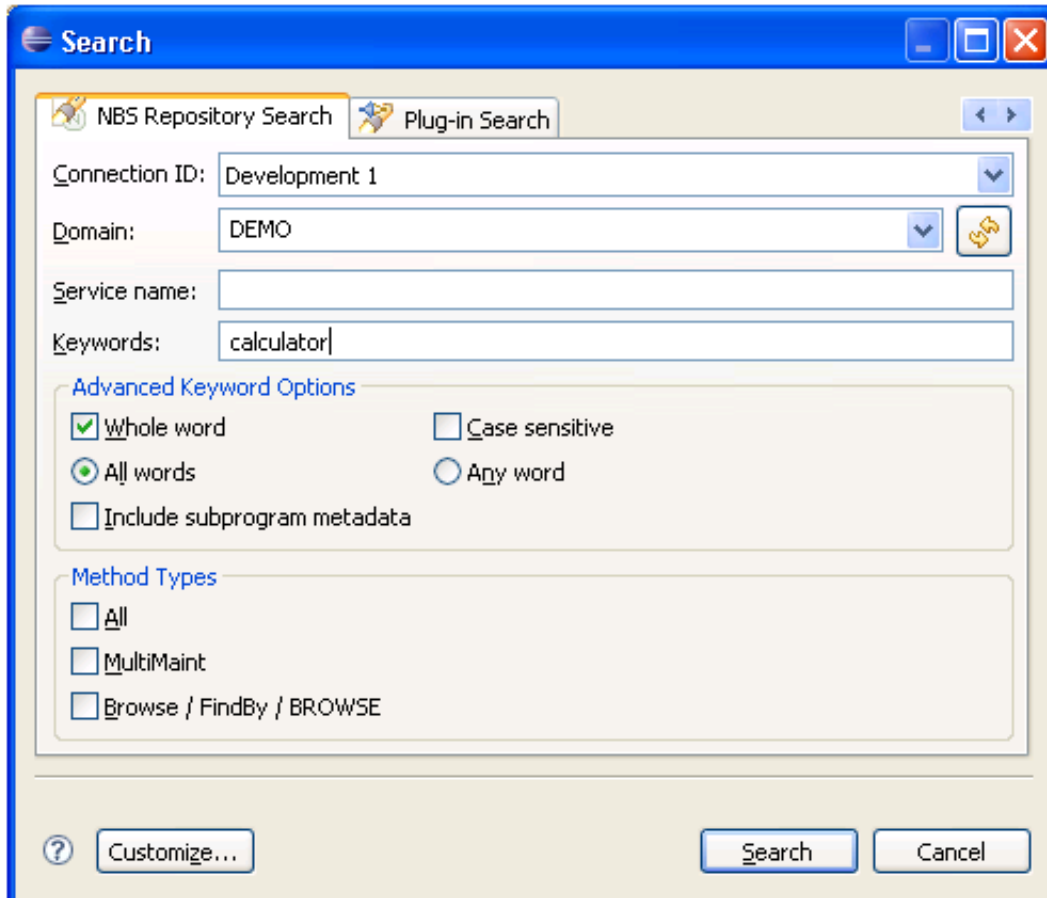
You can further limit the search of business services by using advanced keyword options or specific method types.

Advanced Keyword Options

▶ To limit the search to business services that match the advanced keyword options:

1. Type one or more keywords in **Keywords** in the **Search** window.

For example:



2. Select from the following advanced keyword options:

Keyword Option	Description
Whole word	Search for whole words only (for example, if you type "Customers" in Keywords , business services containing "Customer" will not be returned).
All words	Search for all words specified in Keywords (for example, if you type "Customer record" in Keywords and select All words , only business services containing both "Customer" and "record" will be returned).
Include subprogram metadata	Search business services and their subprogram metadata for services containing the keyword specified in Keywords .
Case sensitive	Search for words using a particular case (for example, if you type "Customer" in Keywords and select Case sensitive , business services containing "customer" will not be returned).
Any word	Search for either word specified in Keywords (for example, if you type "Customer record" in Keywords and select All words , business services containing either "Customer" or "record" will be returned).

3. Select **Search**.

All business services that match the specified options are displayed in the **NBS Search Results** view.

Method Types

You can limit the search to business services containing one of the method types listed. For example, you can search for business services containing:

- All method types
- MultiMaint method types
- Browse or FindBy method types

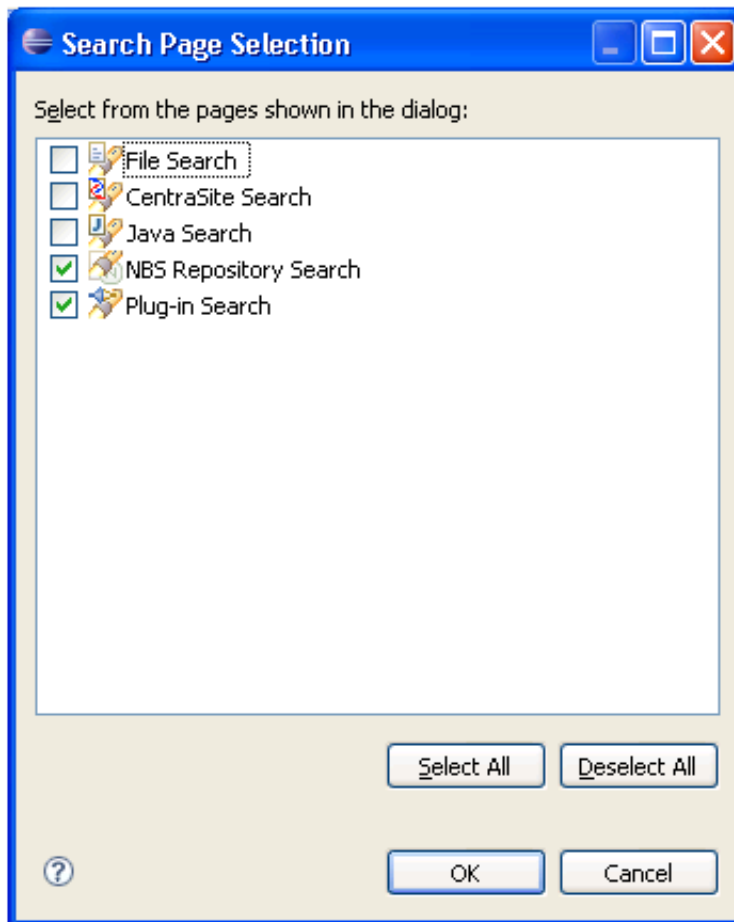
Customize the Search Window

You can customize the **Search** window.

To customize the Search window:

1. Select **Customize**.

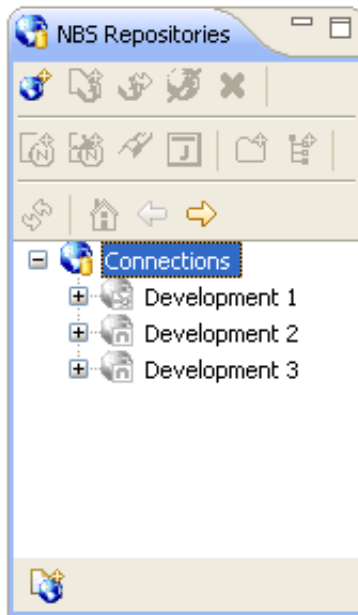
The **Search Page Selection** window is displayed. For example:



2. Select or de-select the pages you want to include in your customized **Search** window.
 - To display all views, select **Select All**.
 - To remove all views and then select one, select **Deselect All**, select the view, and then select **OK**. At least one view must be selected in this window.
3. Select **OK** to confirm the changes.

Set Trace and Log Options

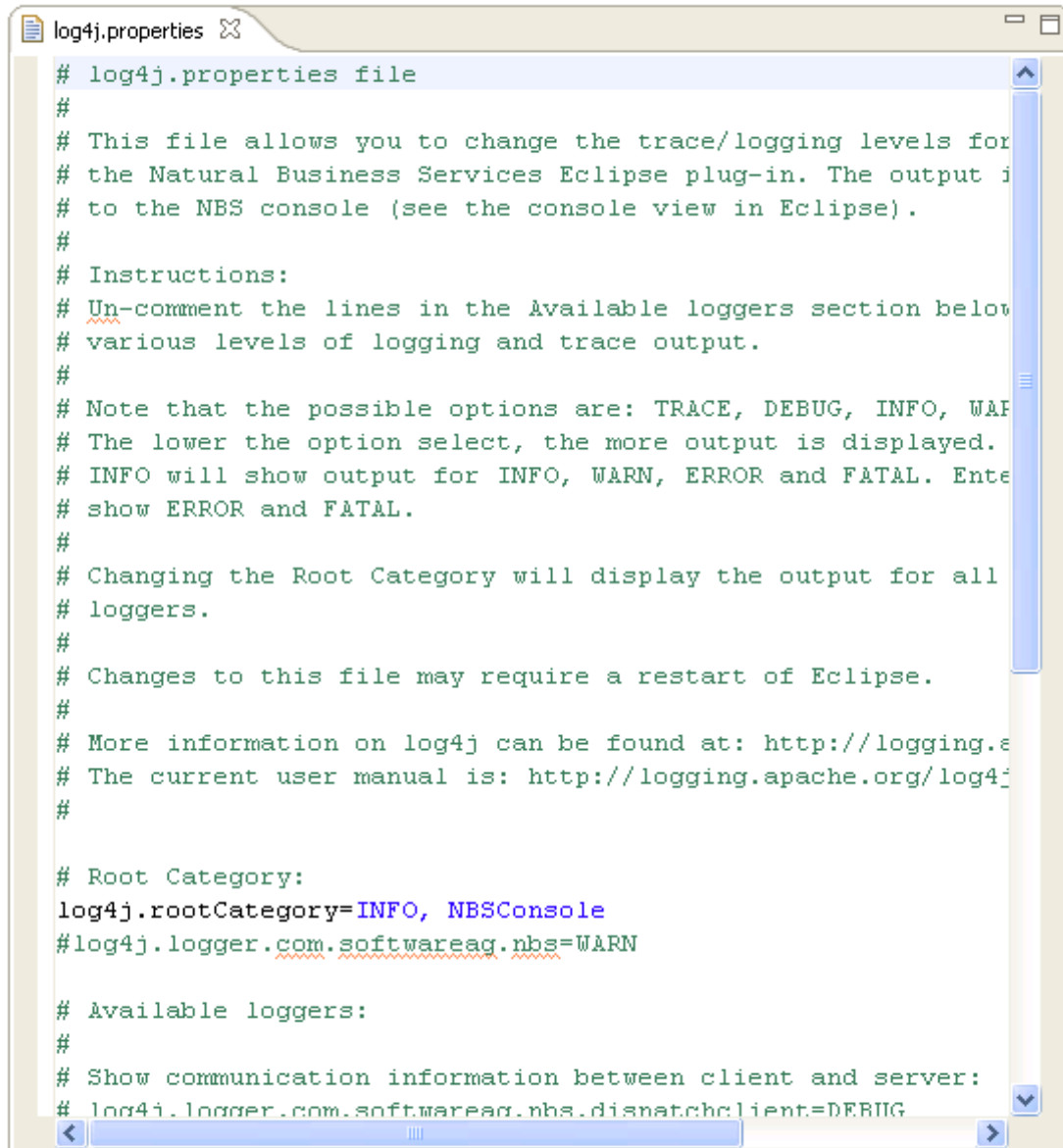
Trace and log functions in the Eclipse plug-in are handled through the *log4j.properties* file using log4j technology. An icon at the bottom of the **NBS Repositories** view allows you to display this file for editing. For example:



► **To set trace and log options:**

1. Select the icon at the bottom of the **NBS Repositories** view.

The *log4j.properties* file is displayed. For example:



```
# log4j.properties file
#
# This file allows you to change the trace/logging levels for
# the Natural Business Services Eclipse plug-in. The output is
# to the NBS console (see the console view in Eclipse).
#
# Instructions:
# Un-comment the lines in the Available loggers section below
# various levels of logging and trace output.
#
# Note that the possible options are: TRACE, DEBUG, INFO, WARN, ERROR, FATAL.
# The lower the option select, the more output is displayed.
# INFO will show output for INFO, WARN, ERROR and FATAL. Enter
# show ERROR and FATAL.
#
# Changing the Root Category will display the output for all
# loggers.
#
# Changes to this file may require a restart of Eclipse.
#
# More information on log4j can be found at: http://logging.apache.org/log4j/
# The current user manual is: http://logging.apache.org/log4j/
#
# Root Category:
log4j.rootCategory=INFO, NBSConsole
#log4j.logger.com.softwareag.nbs=WARN

# Available loggers:
#
# Show communication information between client and server:
# log4j.logger.com.softwareag.nbs.dispatchclient=DEBUG
```

2. Change the trace and log output as desired.

The file contains editing instructions.

3. Select **Save** to save your changes.

Note:

You can use the **Preferences** window to format the trace and log output. For information, see Preferences for Trace and Log Functions.

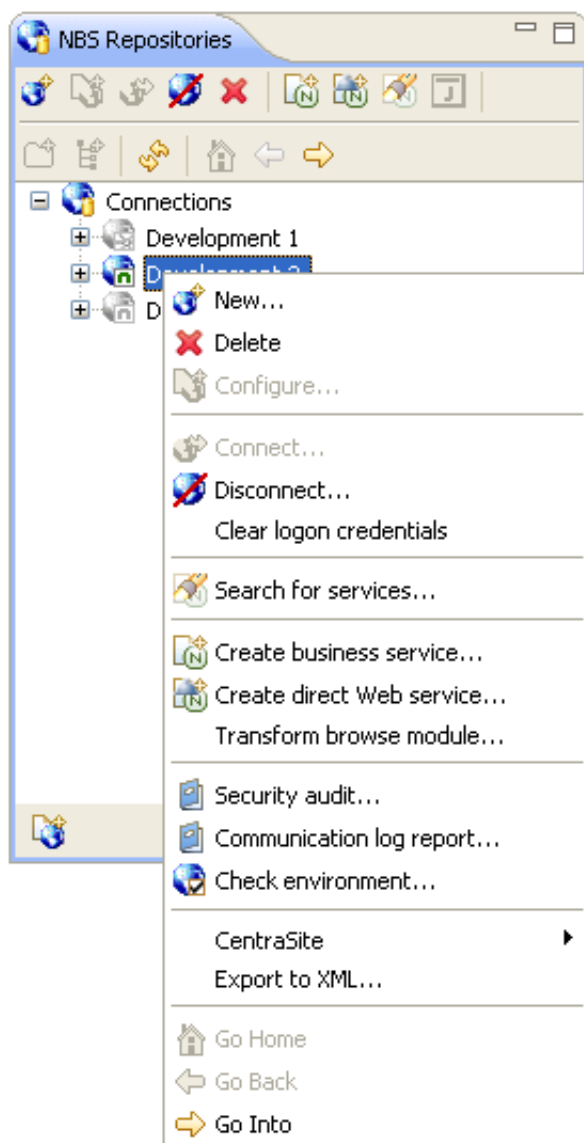
Access Connection Options

Many options are available for connections listed in the **NBS Repositories** view, based on the type of connection (Broker or SPoD).

▶ **To access the connection options:**

- Open the context menu for a connection in the **NBS Repositories** view.

The following example shows the options for a SPoD connection:



Create a Directly Enabled Web Service

This option creates a single Web service from a selected Natural subprogram. The wizard generates a directly enabled business service, a Java class, and a Web service class, and then deploys the service to the server of your choice.

Notes:

1. This option is only available for SPoD connections.
2. You can set default values for this wizard in the *serviceDefaults.xml* file, which is installed in the configuration folder.

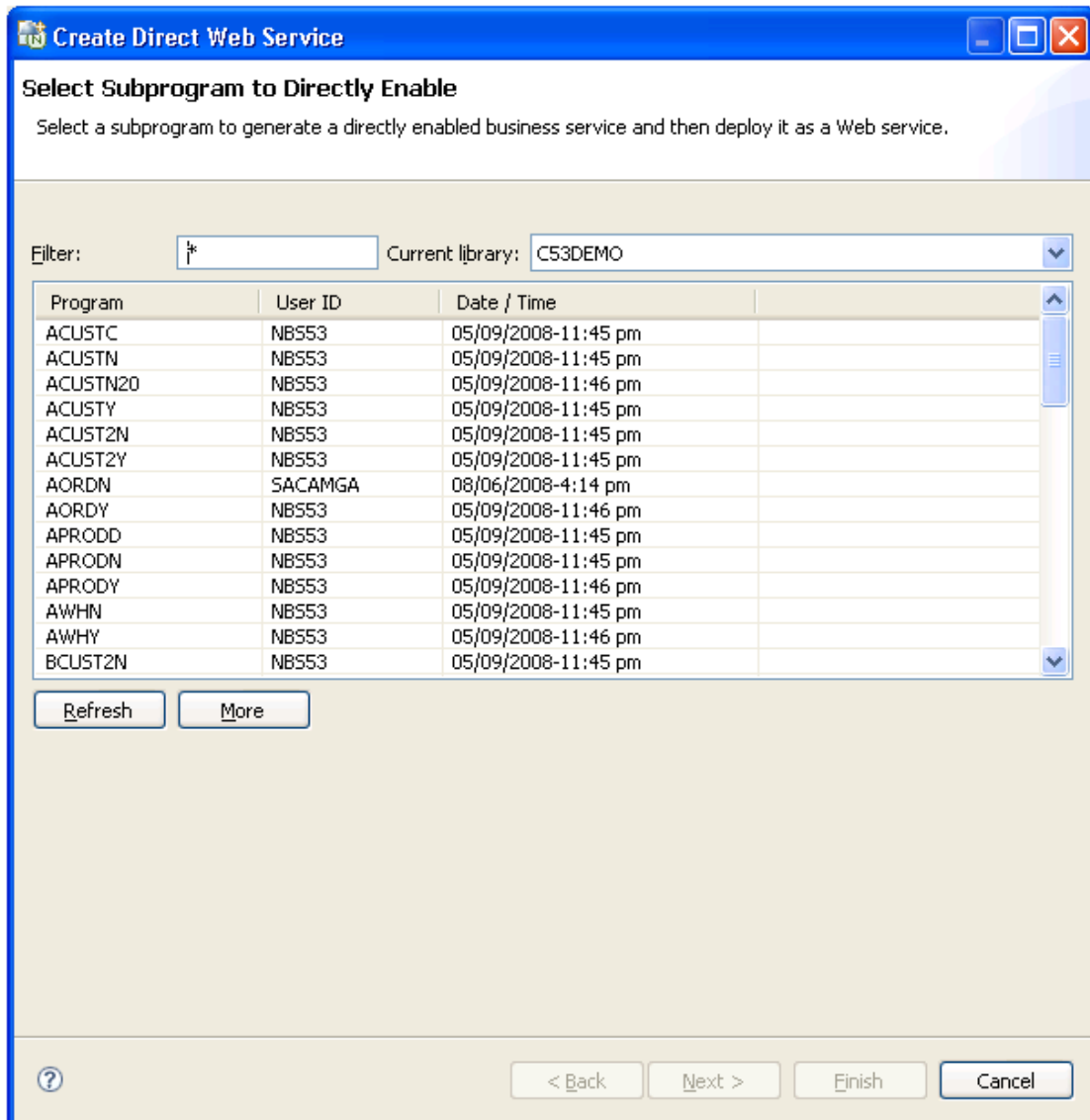
To create a directly enabled Web service:

1. Open the context menu for the SPoD connection in the **NBS Repositories** view.

For an example of this menu, see Access Connection Options.

2. Select **Create direct Web service**.

The **Select Subprogram to Directly Enable** panel is displayed. For example:



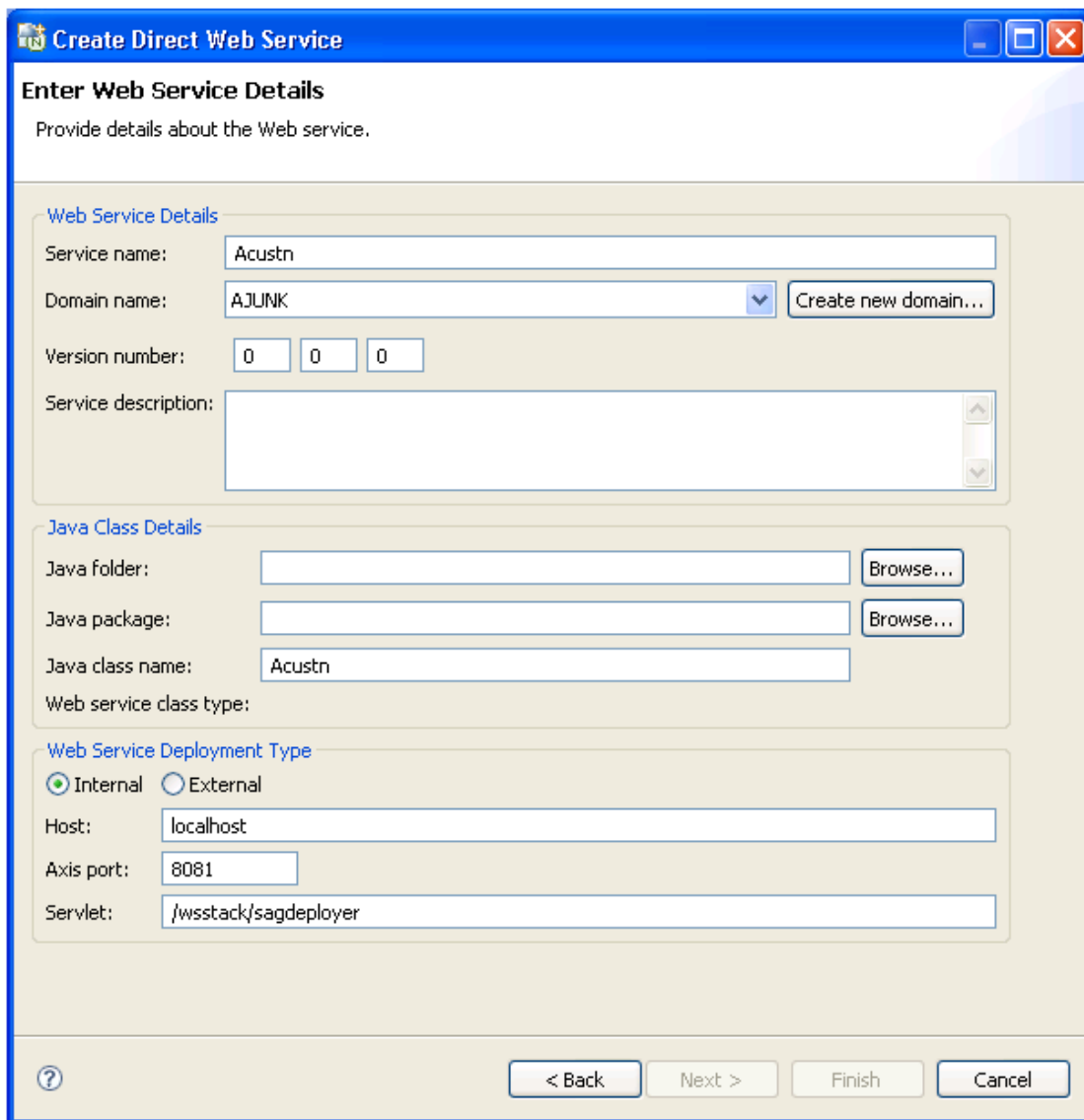
This panel displays the list of subprograms in the current library. Optionally, you can:

Task	Procedure
Display the additional subprograms	If all subprograms cannot be displayed in the space provided, use the scroll bar to display the additional subprograms.
Limit the list of subprograms displayed	Enter a starting value and/or wildcard characters in Filter . In the example above, all subprograms in C53DEMO are displayed.
Change the name of the library	Select a different library from Current library .

3. Select the Natural subprogram you want to use for the service.

4. Select **Next**.

The **Enter Web Service Details** panel is displayed. For example:



The screenshot shows a dialog box titled "Create Direct Web Service" with a sub-panel "Enter Web Service Details". The sub-panel contains three sections: "Web Service Details", "Java Class Details", and "Web Service Deployment Type".

- Web Service Details:** Service name: Acustn; Domain name: AJUNK (with a dropdown arrow and a "Create new domain..." button); Version number: three input boxes, each containing "0"; Service description: an empty text area with scrollbars.
- Java Class Details:** Java folder: empty text box with a "Browse..." button; Java package: empty text box with a "Browse..." button; Java class name: Acustn; Web service class type: empty text box.
- Web Service Deployment Type:** Radio buttons for "Internal" (selected) and "External"; Host: localhost; Axis port: 8081; Servlet: /wsstack/sagdeployer.

At the bottom of the dialog are buttons for "< Back", "Next >", "Finish", and "Cancel", along with a help icon (?) on the left.

To determine default values for several of the input fields on this panel, the wizard uses the *serviceDefaults.xml* file. This file is installed in the configuration folder.

Optionally, you can use this panel to:

Task	Procedure
Change the name of the service	Type a new name in Service name .
Change the name of the domain	Type a new name in Domain name .
Create a new domain	Select Create new domain (if one does not currently exist). For information, see Create a New Domain.
Provide the location of the Java folder	Select a Java folder from Java folder .
Provide the name of the Java package	Select a Java project from Java project .
Change the name of the Java class for the service	Type a new name in Java class name .
Use an external Web service deployment type	Select External and specify the Axis port number and Servlet address. Note: For information about the WS-Stack plug-in, refer to http://rndcvweb.eur.ad.sag/Projects/WSS/Kits/ .

5. Enter the following information for the Web service:

Option	Description
Version number	Number for this version of the Web service. For example, enter "1 1 1" for the first version.
Service description	Brief description of the service.
Java folder	Name of the Java folder for the service.
Internal Axis port	ID for the internal Axis port.

6. Select **Finish** to generate the Web service.

Create a REQUEST DOCUMENT Client

This option generates a subprogram that allows Natural to call an external Web service. The generated Natural subprogram uses REQUEST DOCUMENT and PARSE XML statements to call the service and interpret the response.

Notes:

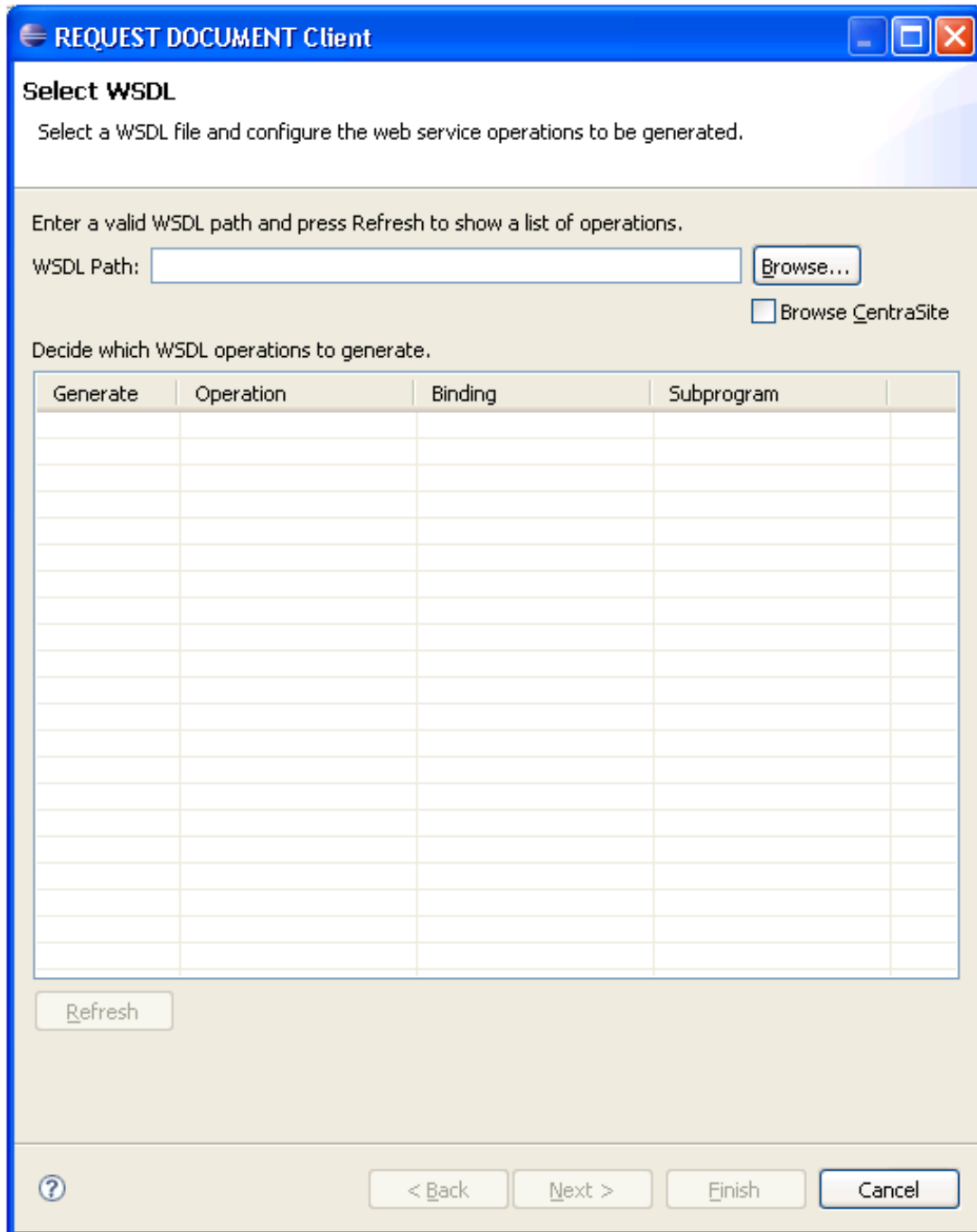
1. You must use a SPoD connection to create a REQUEST DOCUMENT client, although you can use the generated code with any connection.
2. To use this feature, the Natural nucleus/profile must be set up to correctly handle XML. For information, see *Activate PARSE XML Statement* and *Activate REQUEST DOCUMENT Statement* in the Natural documentation.

The generated subprogram contains parameter data areas (PDAs) that map to the request and response portions of a Web service method (operation). The subprogram then maps the input parameters to an XML document, which is sent to the Web service via the REQUEST DOCUMENT statement. The response is verified and parsed in the response PDA and the parameters are generated as #INPUT and #OUTPUT level 1 structures. In addition, the generated subprogram contains an error PDA that informs users of any errors.

 **To create a REQUEST DOCUMENT client:**

1. Select **New > REQUEST DOCUMENT Client** on the **File** menu.

The **Select WSDL** window is displayed. For example:



2. Select a WSDL path in **WSDL Path**.

You can browse for a WSDL path in the file system (select **Browse**) or from CentraSite (select **Browse CentraSite**). You can also type a valid WSDL path using an HTTP location.

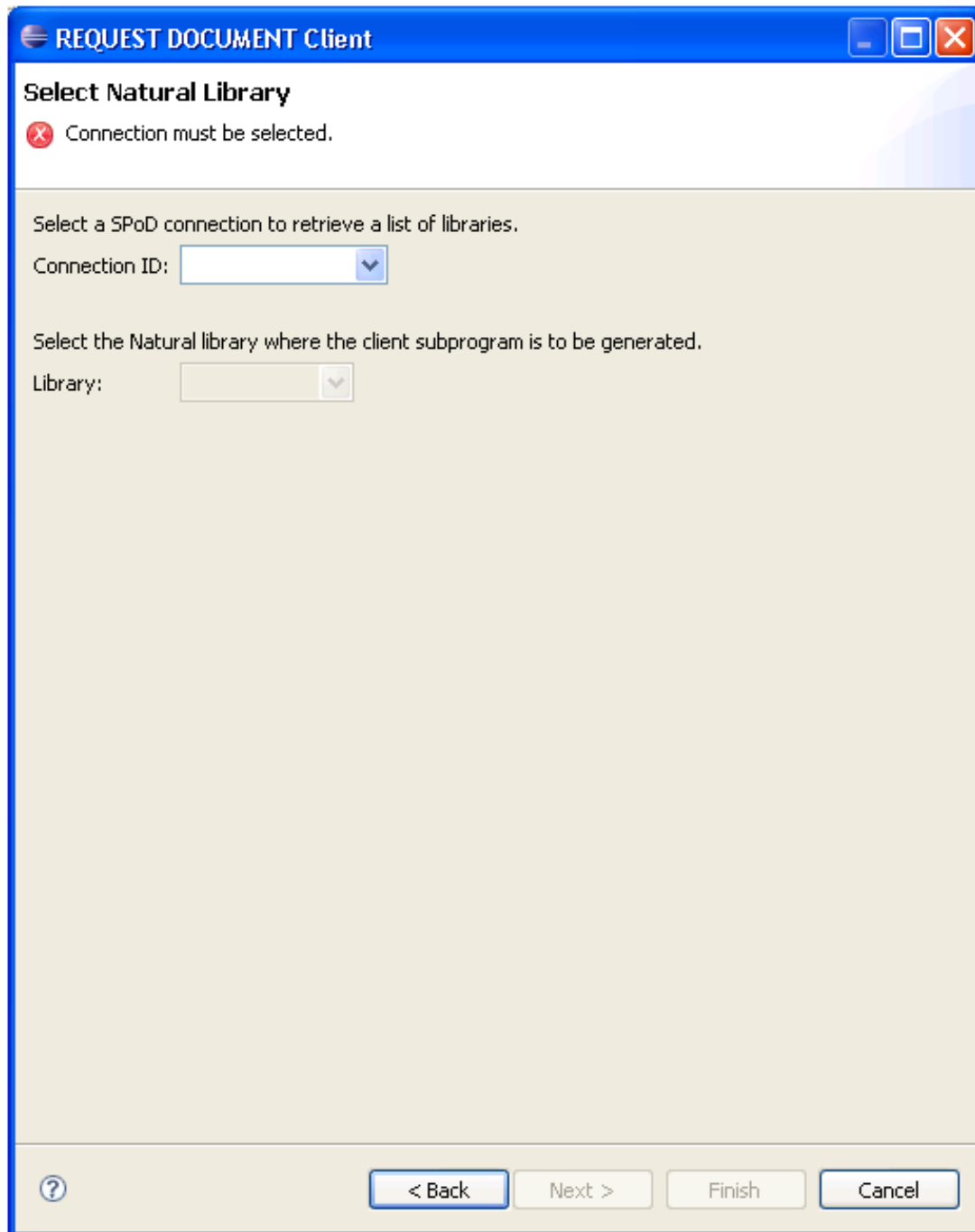
3. Select **Refresh**.

- Which operation is generated
- Which binding is used
- What the generated subprogram is named

If desired, you can change the generated subprogram name in this window.

4. Select **Next**.

The **Select Natural Library** window is displayed. For example:



5. Select a SPoD connection in **Connection ID**.

The wizard retrieves a list of libraries for that connection.

6. Select the library in which to generate the subprogram in **Library**.

7. Select **Finish** to generate the subprogram.

Test the Generated Subprogram

▶ To test the generated subprogram:

1. Create a program that will pass the parameters to the generated subprogram.
2. Supply the requested input.
3. Verify the output after the CALLNAT has been issued.

Transform a Browse Module

This option transforms a Natural Construct-generated browse module into object browse modules for use in a client/server environment.

Note:

This option is only available for SPoD connections.

▶ To access the Transform Browse wizard:

1. Open the context menu for the SPoD connection in the **NBS Repositories** view.

For information, see Access Connection Options.

2. Select **Transform browse module**.

The **Select Browse Module** panel is displayed. For more information, see *Eclipse Plug-in* in Verify Transformation Specifications Panel.

Check Environment Information for a Connection

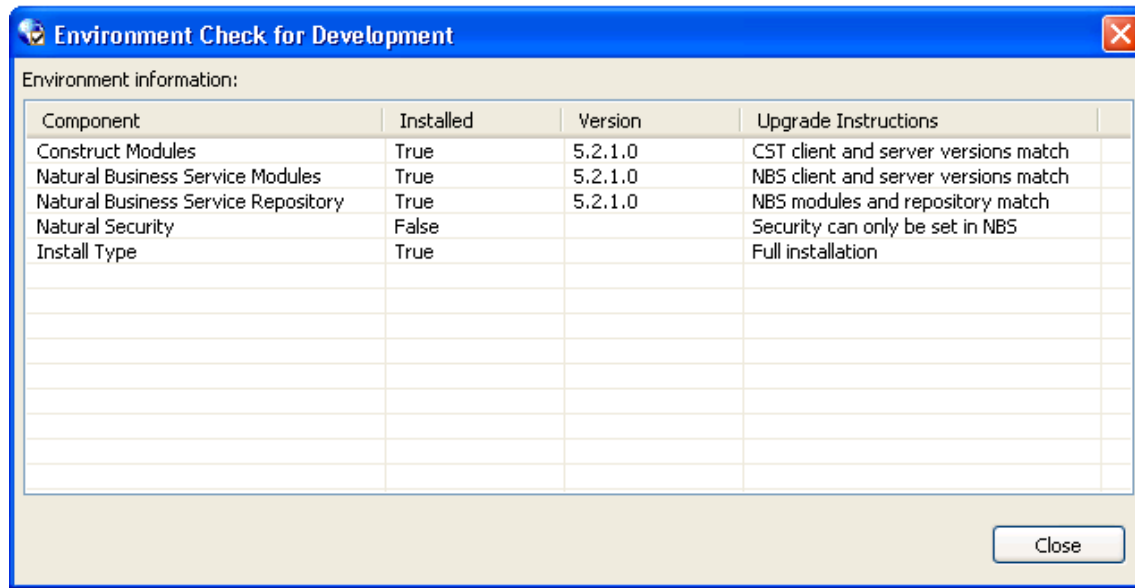
▶ To display the environment information:

1. Open the context menu for the connection in the **NBS Repositories** view.

For an example of this menu, see Access Connection Options.

2. Select **Check environment**.

The **Environment Check** window is displayed. For example:



This window displays information about the environment for the current connection.

3. Select **Close**.

Access CentraSite

This option adds Natural Business Services repository metadata to CentraSite. The information includes business services, subprograms, proxies, and Natural Construct model, file, and field names, as well as information on relationships (for example, a business service belongs to a domain, a subprogram uses a certain file, etc.). You can also remove the repository metadata from CentraSite. For information, see Remove Concepts.

Import Custom Concepts into the CentraSite Server

Before you can add concepts to CentraSite, custom concept archive files must be imported into the CentraSite server. These files are located in the CentrasiteImports folder within the NBS install folder (for example, *C:\Program Files\Software AG\Natural Business Services\V5.3\CentrasiteImports\Concept-*.zip*).

▶ To import custom concepts to the CentraSite server:

1. Open CentraSite Control and log on.
2. Select **Import**.
3. Select **Archive** in **Import type**.
4. Select the custom concept archive file.

5. Select **Import**.
6. Repeat steps 2 to 5 for each custom archive file.

Add Concepts

To add repository metadata to CentraSite:

1. Open the context menu for the connection in the **NBS Repositories** view.

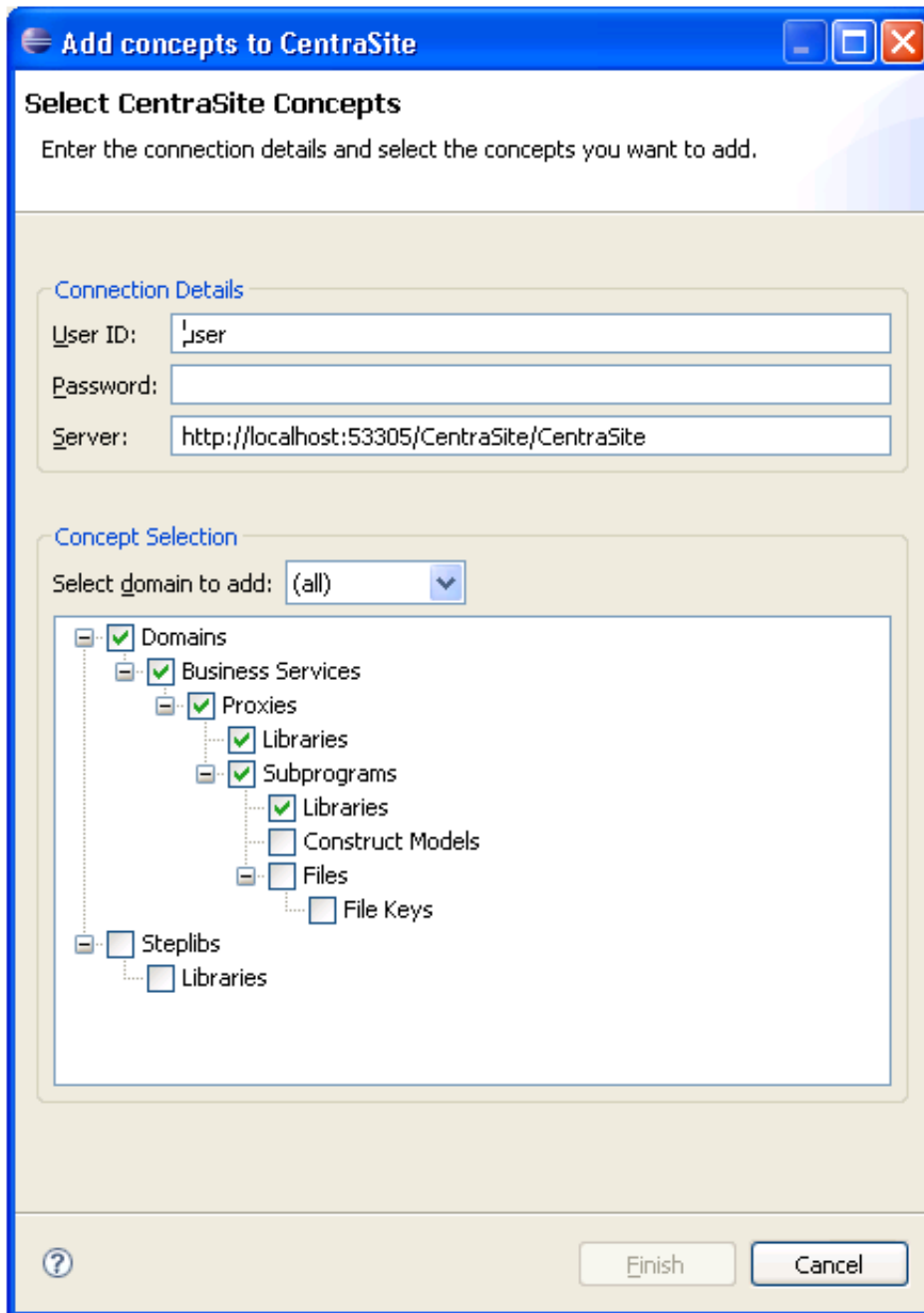
For an example of this menu, see Access Connection Options.

2. Select **CentraSite**.

The CentraSite options are displayed.

3. Select **Add concepts**.

The **Select CentraSite Concepts** window is displayed. For example:

**Tip:**

You can also access this window from the context menu for a domain. If you do, the domain will be selected automatically in **Select domain to add**.

4. Type the user ID for CentraSite in **User ID**.
5. Type the password for CentraSite in **Password**.

6. Verify the location of the server port for CentraSite in **Server**.
7. Verify which nodes in the repository tree you want to add to CentraSite.

By default, the information for all domains, business services, proxies, libraries, and subprograms is added to CentraSite. You can select other nodes in the repository tree (listed in **Concept Selection**) or de-select any nodes you do not want to add.

- To add one domain only, select the domain in **Select domain to add**.
 - To include details about the step library chains, select **Steplibs** in the repository tree.
8. Select **Finish** to add the selected nodes to CentraSite.

Remove Concepts

This action will remove ALL repository metadata entries (i.e., any registry object that has one of the Natural Business Services custom concepts as its object type).

To remove repository metadata from CentraSite:

1. Open the context menu for the connection in the **NBS Repositories** view.

For an example of this menu, see Access Connection Options.

2. Select **CentraSite**.

The CentraSite options are displayed.

3. Select **Remove concepts**.

The **Select CentraSite Concepts** window is displayed. For example:

Remove concepts from CentraSite

Select CentraSite Concepts

Enter the connections details for the concepts you want to remove.

Connection Details

User ID:

Password:

Server:

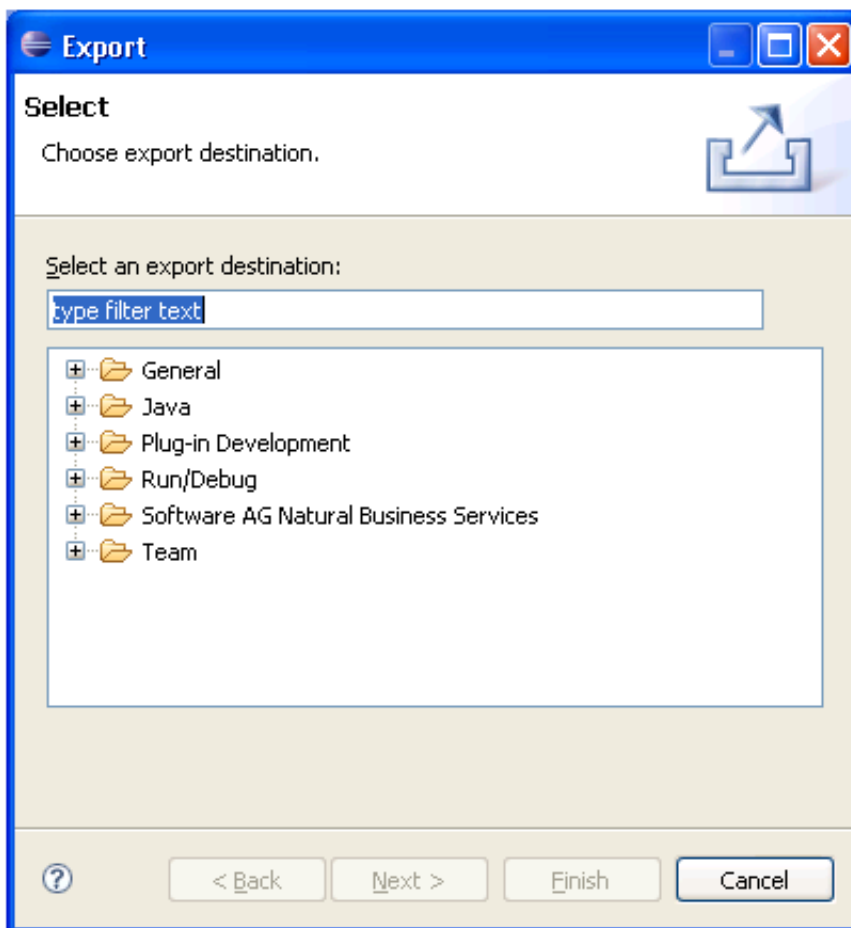
4. Type the user ID for the CentraSite concepts you want to remove in **User ID**.
5. Type the password for the CentraSite concepts in **Password**.
6. Verify the location of the server port for CentraSite in **Server**.
7. Select **Finish**.

Export Repository Metadata to XML

▶ To export repository metadata to XML:

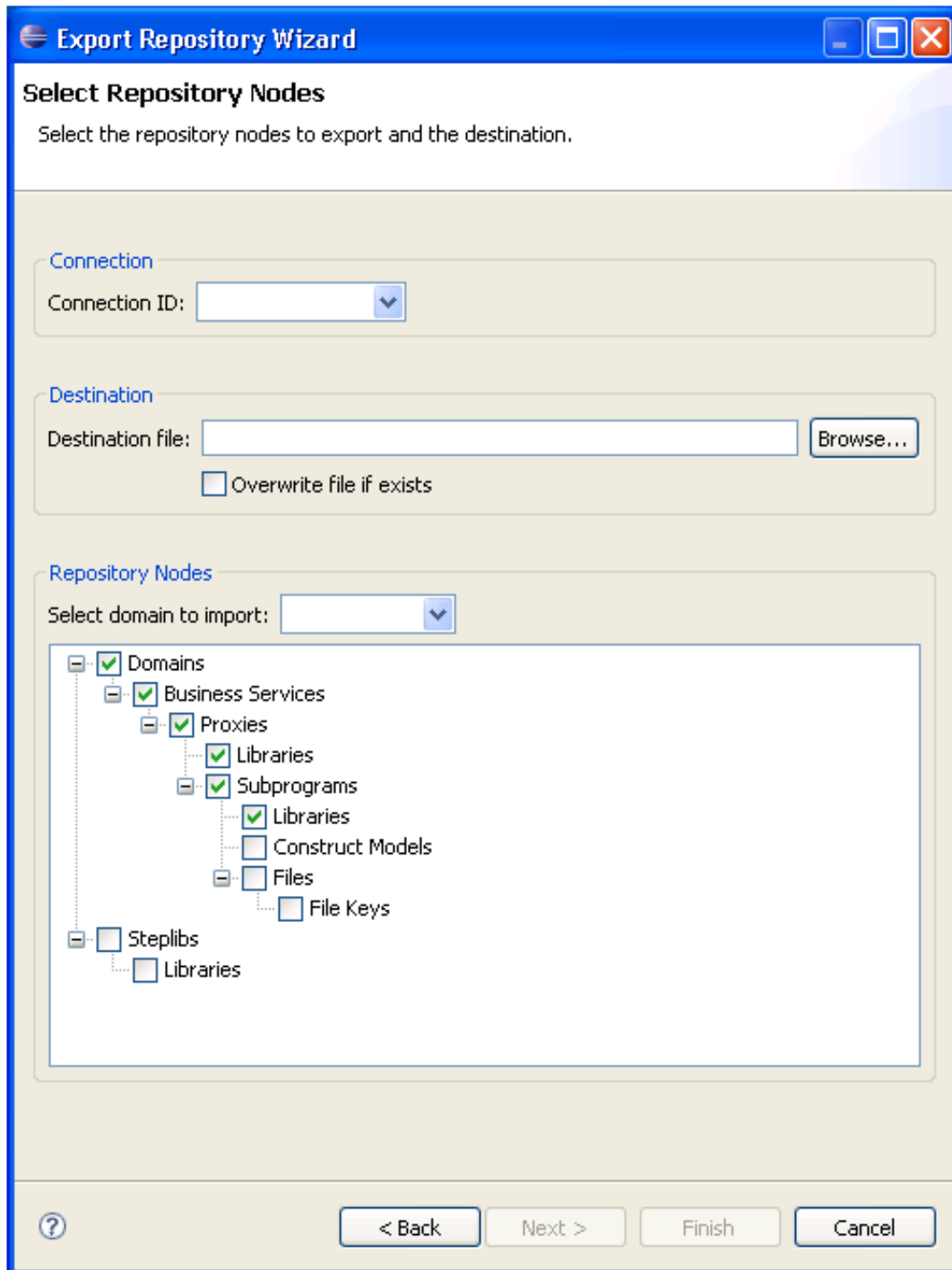
1. Select **Export** on the **File** menu.

The **Export** window is displayed. For example:



2. Expand the **Software AG Natural Business Services** node.
3. Select **NBS Repository**.
4. Select **Next**.

The **Select Repository Nodes** window is displayed. For example:

**Tip:**

You can also access this window using the context menu for an open connection or for a domain listed in the **NBS Repositories** view.

5. Select the Connection ID for the repository metadata you want to export.
6. Select an output file name in **Destination file**.

To overwrite the existing file, select **Overwrite file if exists**.

Tip:

If you type the file name, ensure the name includes the .xml extension.

7. Select the domain containing the repository metadata you want to export.
To export the metadata for all domains, select **(all)**.
8. Select the repository metadata you want to include in the exported file.
9. Select **Finish** to export the selected repository metadata.

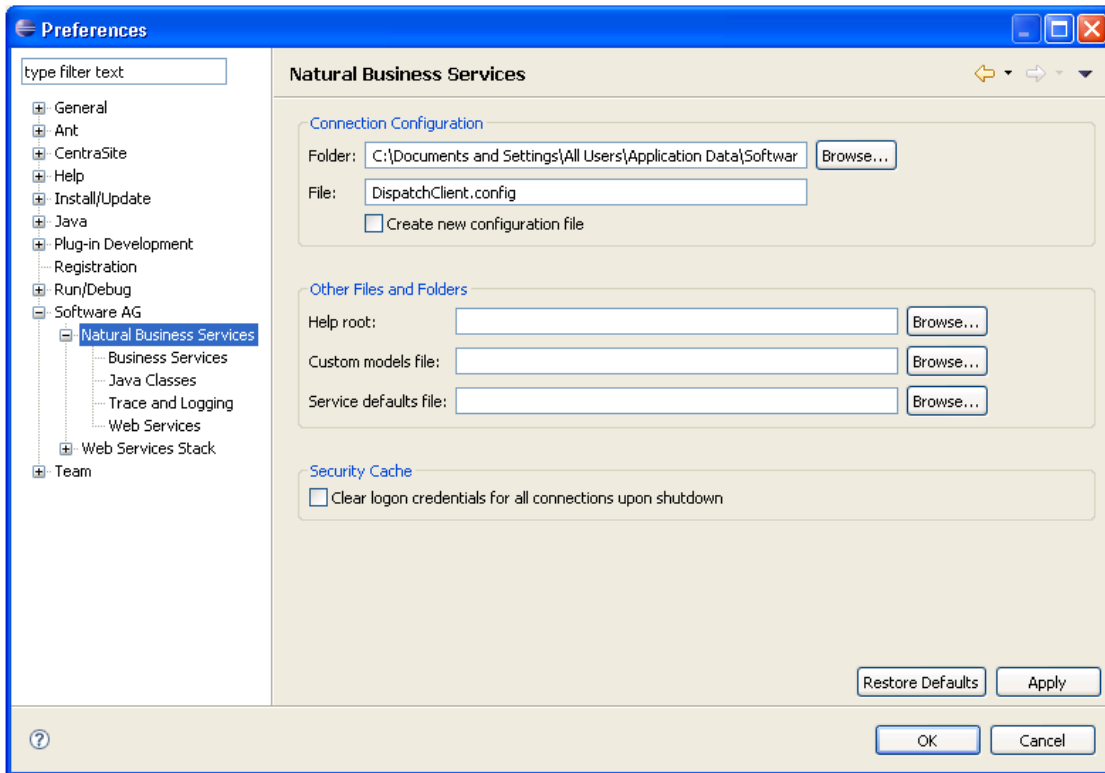
Set Natural Business Service Preferences

This section describes how to set preferences for Natural Business Services (NBS).

 **To set preferences for NBS:**

1. Select **Preferences > Software AG > Natural Business Services** on the **Window** menu.

The **Preferences** window for Natural Business Services is displayed. For example:



Using this window, you can:

Task	Procedure
Change the configuration folder used	Select another folder from Folder .
Create a new configuration file	Select Create new configuration and enter the name of the new file in File .
Specify the folder containing the help file	Select the folder from Help root .
Specify the file containing custom models	Select the file from Custom models file .
Specify the file containing default values for business services	Select the file from Service defaults file .
Remove saved credentials from the security cache	Select Clear logon credentials for all connections upon shutdown to remove the saved credentials from the security cache for all connections when Eclipse shuts down. Tip: You can also clear all logon credentials by opening the context menu for the Connections node in the NBS Repositories view and selecting Clear all logon credentials .
Restore all default values for the configuration file	Select Restore Defaults .

2. Select **OK** to apply the changes and close the **Preferences** window.

Note:

To apply the changes without closing the window, select **Apply**.

In addition to these preferences, you can also set the following:

- Preferences for Business Services
- Preferences for Java Classes
- Preferences for Trace and Log Functions
- Preferences for Web Services

Preferences for Business Services

Use this setting to have NBS create the interface for all new services using Unicode field formats (U data type).

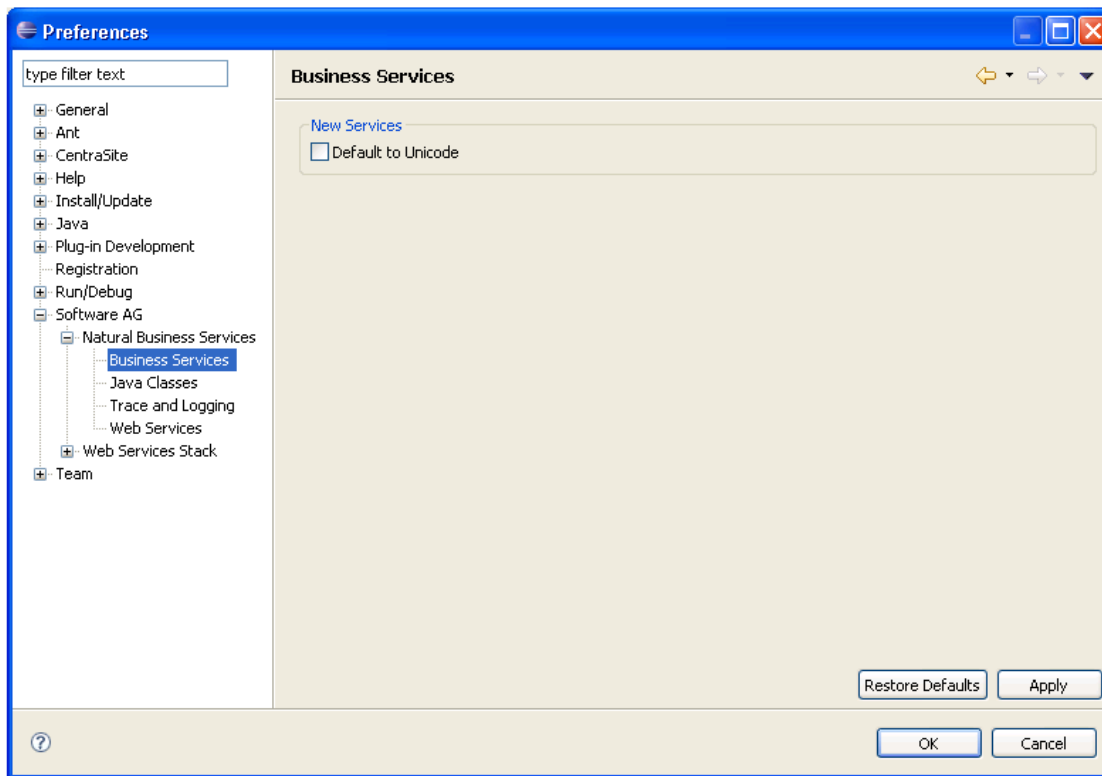
Note:

Services that use a Unicode interface require a special EntireX runtime server definition. For information, see *Use Unicode Parameters for Your Business Service*.

▶ **To set the business service preferences:**

1. Select the **Business Services** node.

The Business Services information is displayed. For example:



The only option available in this window is **Default to Unicode**, which allows all new services to be Unicode enabled.

2. Select **Default to Unicode**.
3. Select **OK** to apply the changes and close the **Preferences** window.

Note:

To apply the changes without closing the window, select **Apply**.

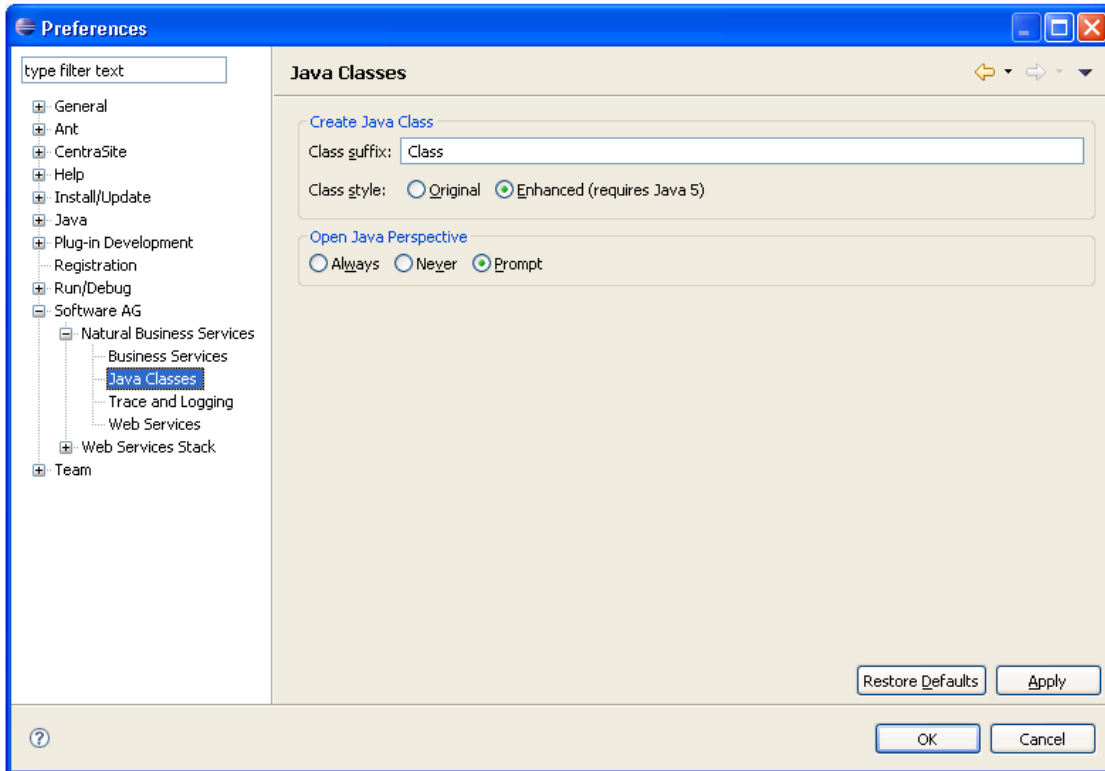
Preferences for Java Classes

Use this setting to define preferences for creating new Java classes.

▶ **To set the Java class preferences:**

1. Select the **Java Classes** node.

The Java Classes information is displayed. For example:



2. Type a class suffix in **Class suffix**.
3. Select the target Java Virtual Machine (VM) version in **Class style**.

The class styles are:

- Original (Java VM 1.4)
 - Enhanced (Java VM 5)
4. Select one of the Java perspective options.
- These options are:
- Always (open the Java perspective when creating Java classes)
 - Never (do not open the Java perspective)
 - Prompt (allow the user to select the option)
5. Select **OK** to apply the changes and close the **Preferences** window.

Note:

To apply the changes without closing the window, select **Apply**.

Preferences for Trace and Log Functions

Use this setting to format the trace and log output.

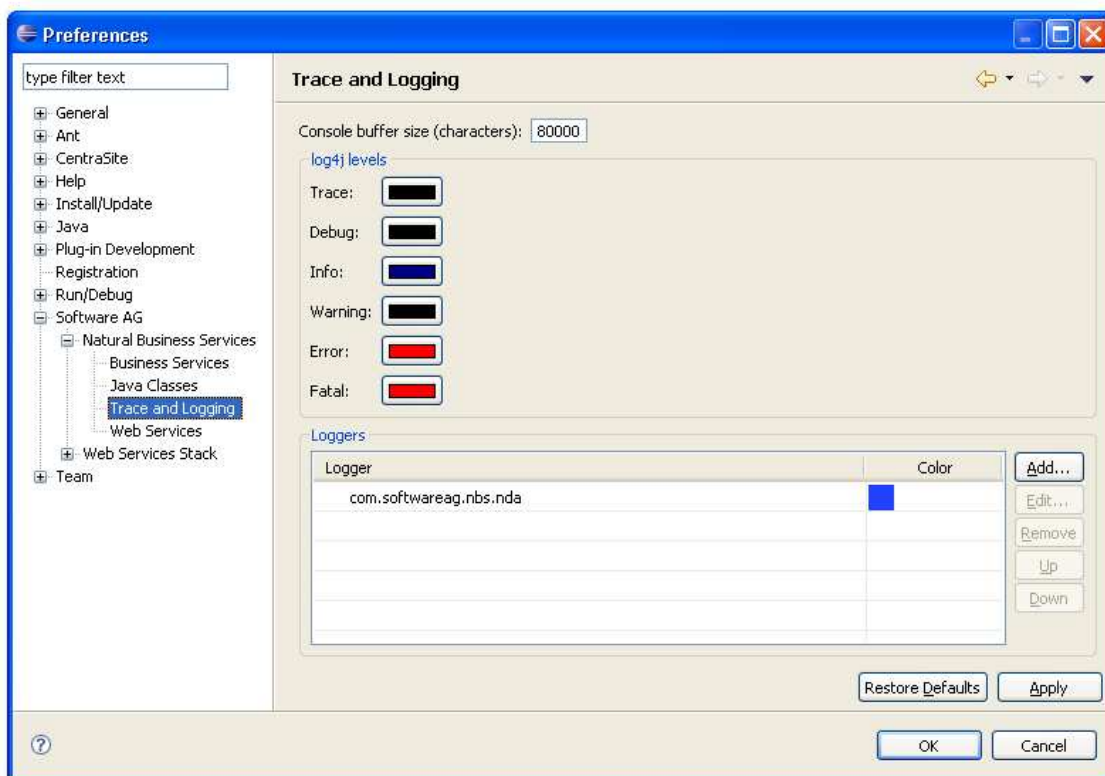
Note:

For information on setting trace and log options, see Set Trace and Log Options.

▶ To format the trace and log output:

1. Select the **Trace and Logging** node.

The Trace and Logging information is displayed. For example:



This window displays the default buffer size reserved for the NBS Console in the Eclipse plug-in, the current colors for different log4j levels, and a list of the overridden logger files and corresponding colors.

Note:

Color settings specified in the Loggers section take precedence over color settings specified in the log4j levels section.

2. Accept or change the default buffer size reserved for the NBS Console.
3. Accept or change the current color for each log4j level.

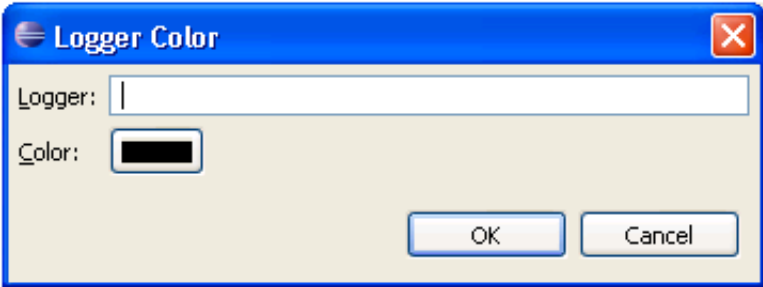
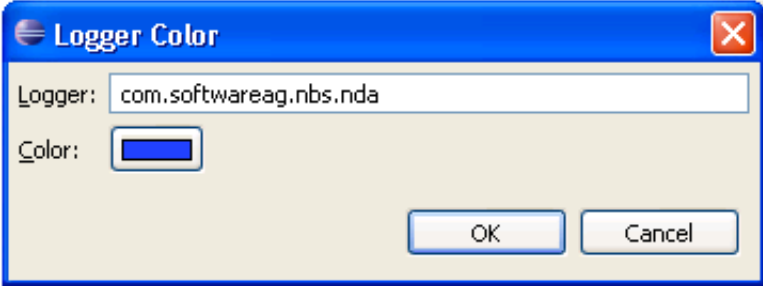
When you select a color, the Color window is displayed. Use this window to select the new color.

4. Accept or change the current logger files and colors.

Note:

The logger names listed in this window are derived from the *log4j.properties* file.

You can use the buttons in the Loggers section of this window to:

Task	Procedure
Add a new logger file	<p>Select Add. The Logger Color window is displayed. For example:</p>  <p>Type the name of the logger file in Logger and select Color. The Color window is displayed to select a color to identify the file in the NBS Console view.</p>
Change an existing logger file	<p>Select the file you want to change and select Edit. The Logger Color window is displayed, showing information for the file you selected. For example:</p>  <p>Change the name of the logger file in Logger and/or select Color. The Color window is displayed to select a new color.</p>
Remove a logger file	<p>Select the file you want to delete and select Remove. The selected logger file is removed from the Loggers section.</p>
Move a logger file up or down in the list	<p>Select the file you want to move and select Up or Down. This changes the order of precedence for the files. If one logger file overlaps another, the highest one in the list will be used.</p>

5. Select **OK** to apply the changes and close the **Preferences** window.

Note:

To apply the changes without closing the window, select **Apply**.

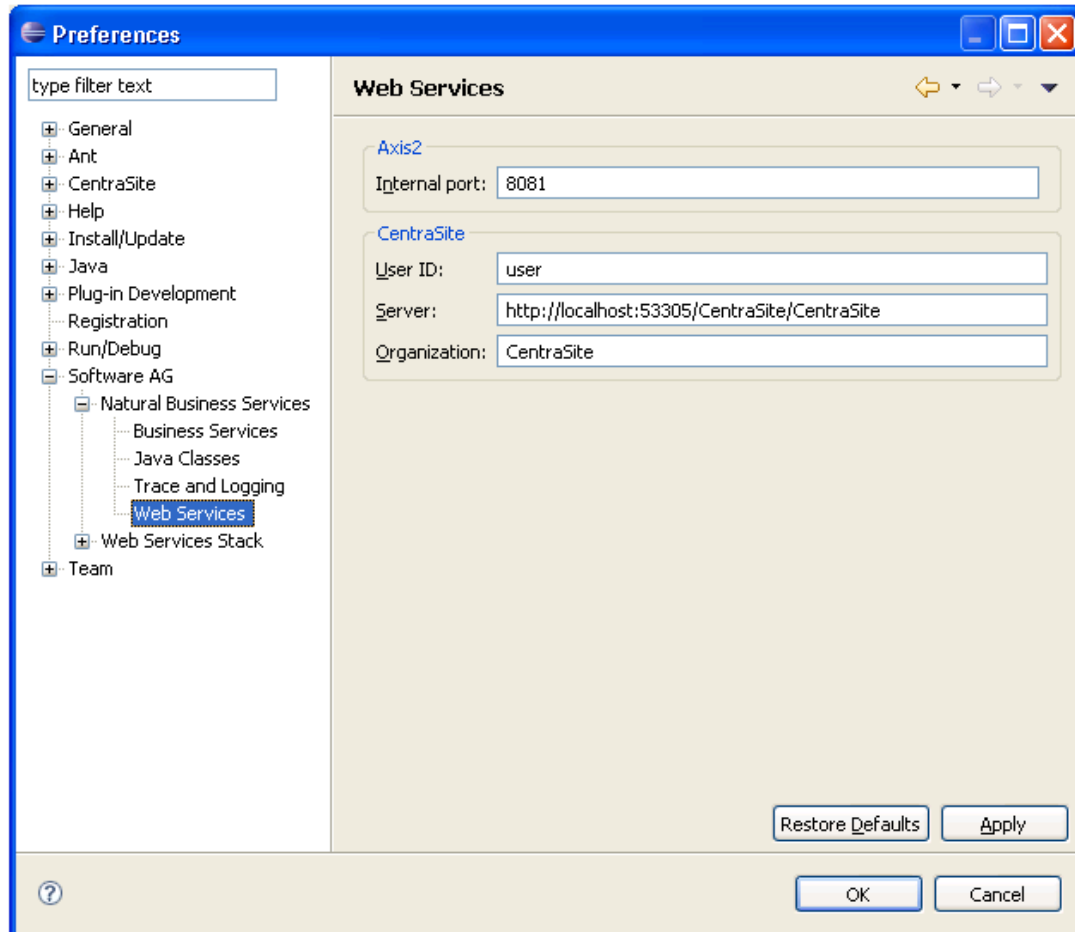
Preferences for Web Services

Use this setting to define the internal port for Axis2 and CentraSite details.

▶ **To set the Web service preferences:**

1. Select the **Web Services** node.

The Web Services information is displayed. For example:



The current Axis2 internal port number is displayed, as well as information on CentraSite.

2. Accept or change the Axis2 internal port number.
3. Accept or change the CentraSite user ID, server location, and organization name.
4. Select **OK** to apply the changes and close the **Preferences** window.

Note:

To apply the changes without closing the window, select **Apply**.

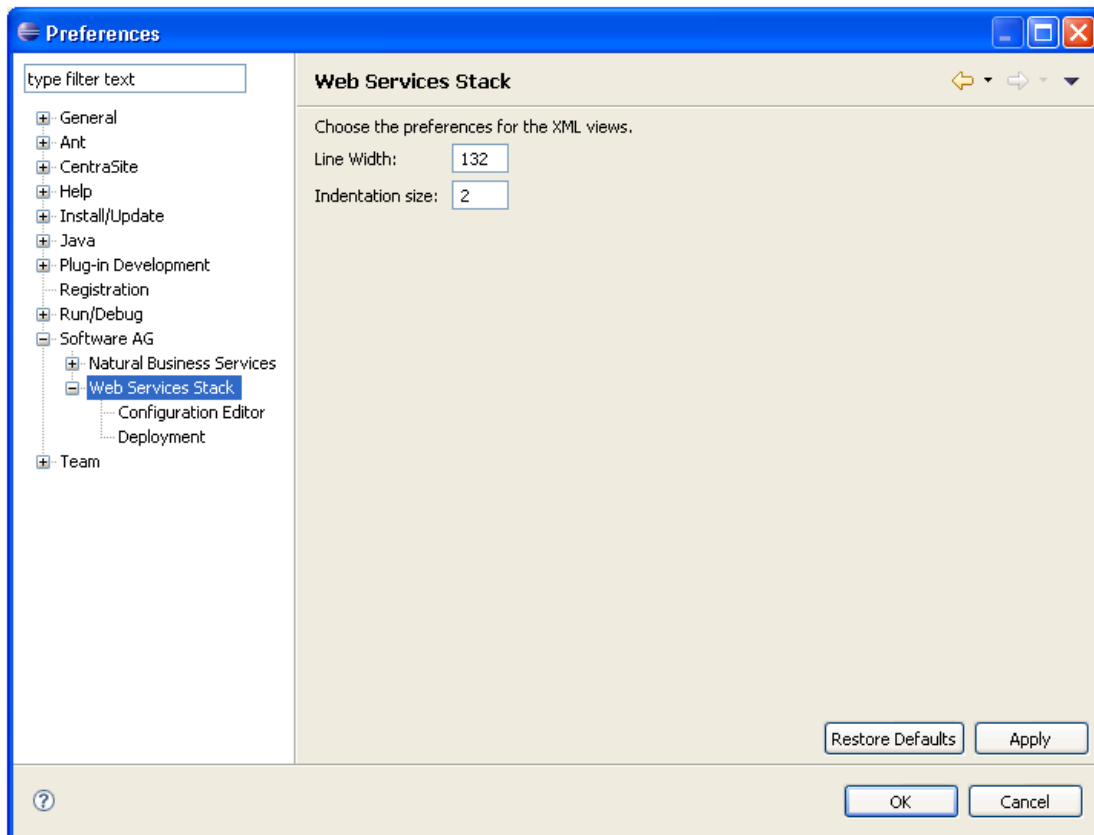
Set Web Services Stack Preferences

This section describes how to set Web service stack preferences for the WS-Stack plug-in.

▶ **To set Web service preferences for the WS-Stack plug-in:**

1. Select **Preferences > Software AG > Web Services Stack** on the **Window** menu.

The **Preferences** window for Web Services Stack is displayed. For example:



Use this window to:

Task	Procedure
Change the line width used for XML views	Enter another value in Line width .
Change the size of the indentation used for XML views	Enter another value in Indentation size .

2. Select **OK** to apply the changes and close the **Preferences** window.

Note:

To apply the changes without closing the window, select **Apply**.

In addition to these preferences, you can also set the following:

- Preferences for the Configuration Editor
- Preferences for Deployment

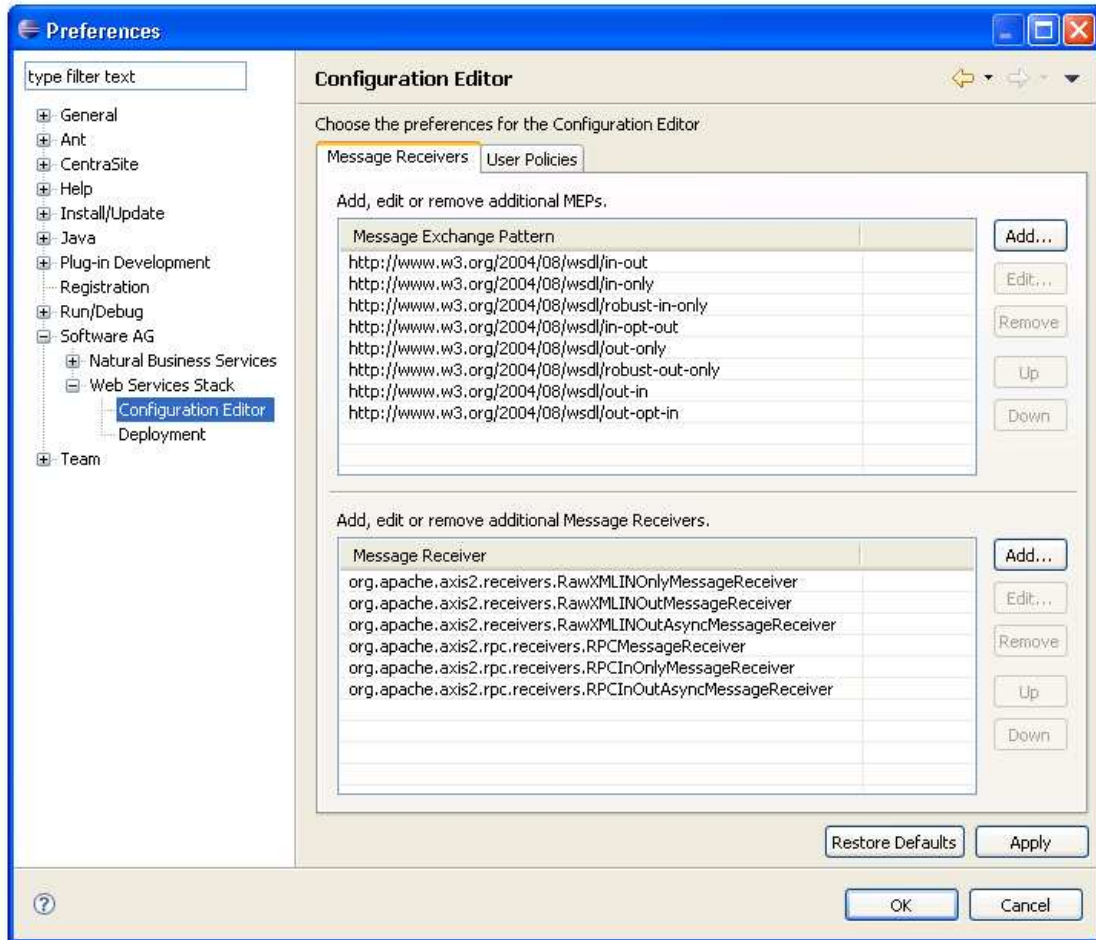
Preferences for the Configuration Editor

Use this setting to define preferences for the Web services Configuration editor.

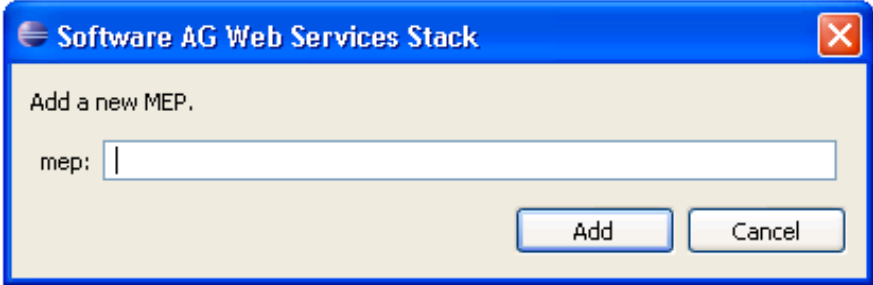
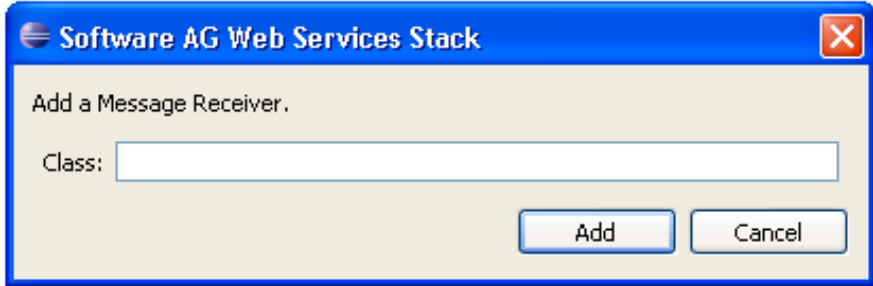
 **To set preferences for the Configuration editor:**

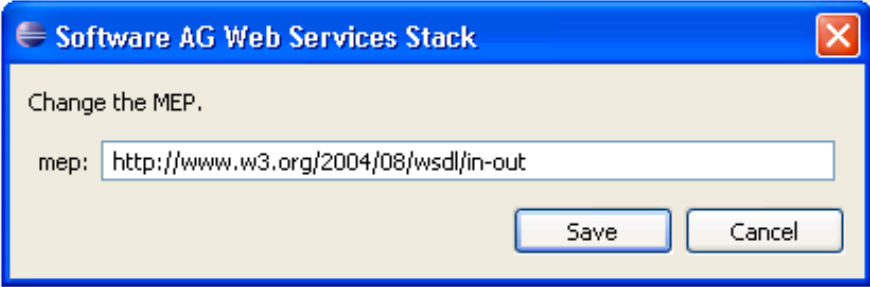
1. Select the **Configuration Editor** node.

The Configuration Editor information is displayed for message exchange patterns and message receivers. For example:



The current message exchange patterns and message receivers are displayed. Use this window to:

Task	Procedure
<p>Add a new message exchange pattern</p>	<p>Select Add in Message Exchange Pattern. The Add a new MEP window is displayed. For example:</p>  <p>Enter the name of the message exchange pattern and select Add. The pattern is added to the list.</p>
<p>Add a new message receiver</p>	<p>Select Add in Message Receiver. The Add a Message Receiver window is displayed. For example:</p>  <p>Enter the name of the message receiver and select Add. The receiver is added to the list.</p>

Task	Procedure
Edit a message exchange pattern or message receiver	<p>Select the pattern or receiver in the list and select Edit. The pattern or receiver is displayed for editing. For example:</p>  <p>Change the pattern (or receiver) information and select Save to save the changes.</p>
Remove a message exchange pattern or message receiver	Select the pattern or receiver in the list and select Remove .
Change the sequence in which the message exchange patterns or message receivers are listed	Select the pattern or receiver in the list and select Up or Down .
Set user policies	Select the User Policies tab. For information, see User Policies Tab.

2. Accept or change the message exchange patterns, message receivers, and/or user policies for Web services.
3. Select **OK** to apply the changes and close the **Preferences** window.

Note:

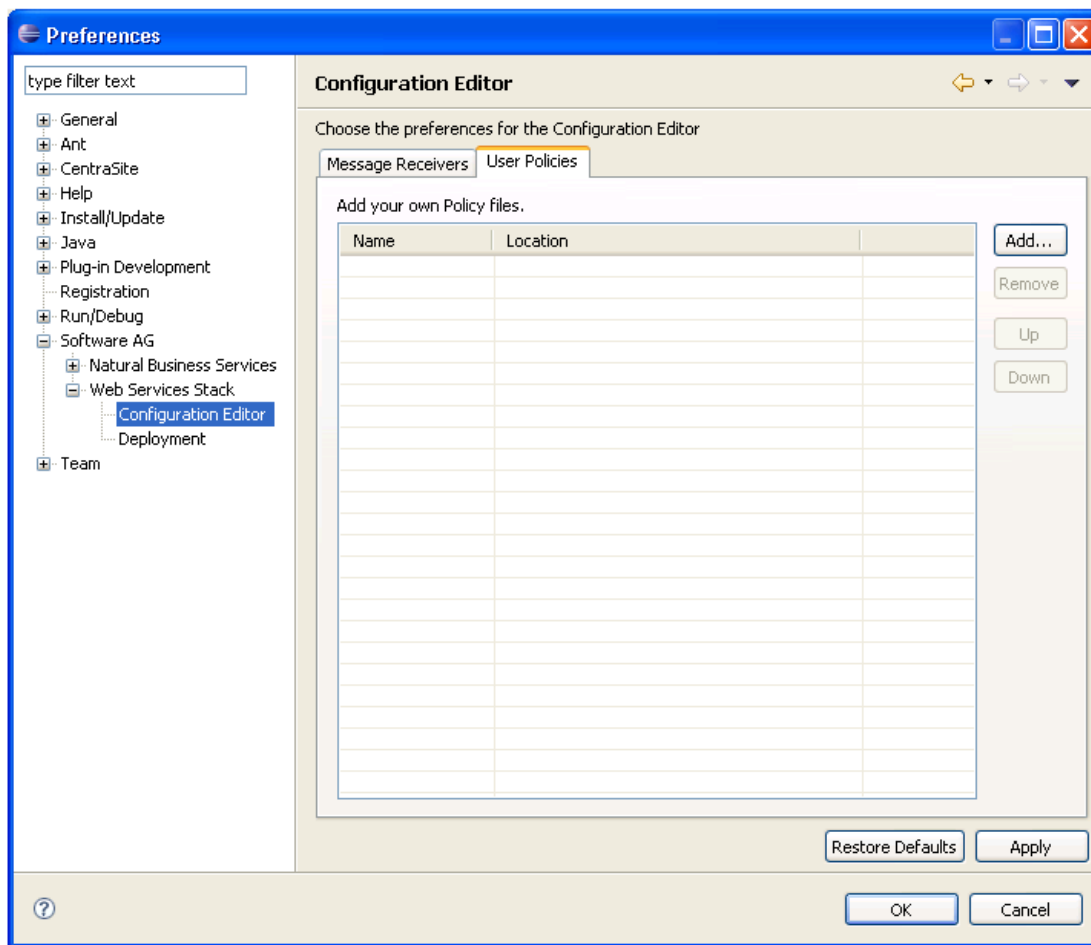
To apply the changes without closing the window, select **Apply**.

User Policies Tab

▶ To set user policies for Web services:

- Select the User Policies tab in the **Configuration Editor** node.

The Configuration Editor information is displayed for user policies. For example:



Use this window to:

Task	Procedure
Add a new user policy	Select Add and browse for the XML file containing the user policy you want to add.
Remove an existing user policy	Select the user policy in the list and select Remove .
Change the sequence in which the user policies are listed	Select the user policy and select Up or Down .

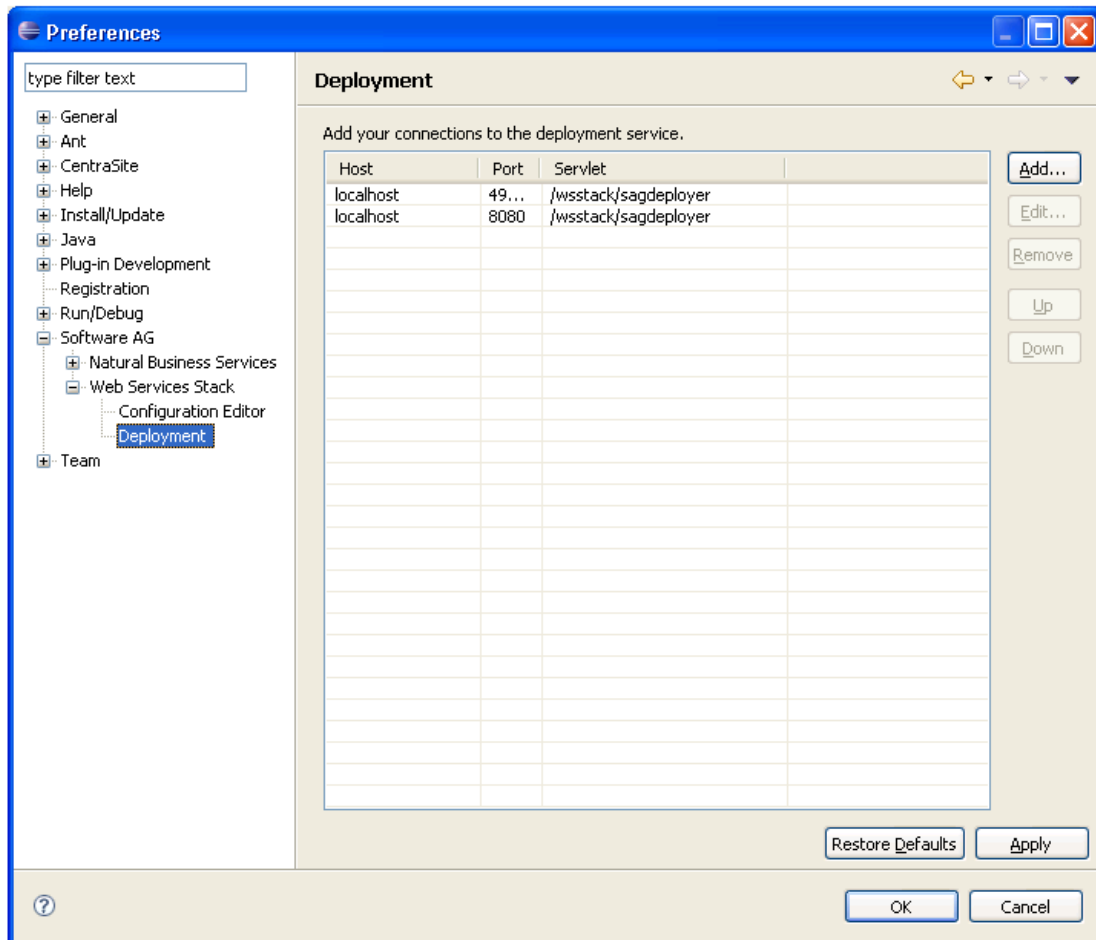
Preferences for Deployment

Use this setting to define preferences for the deployment of Web services.

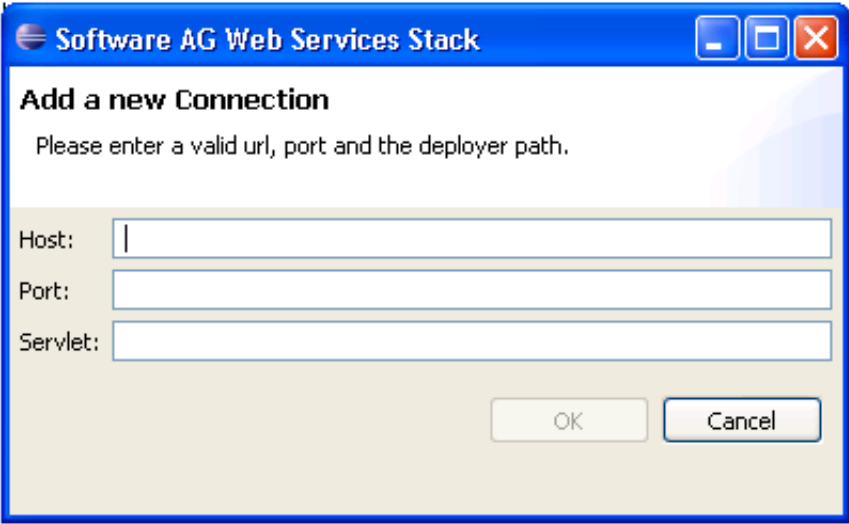
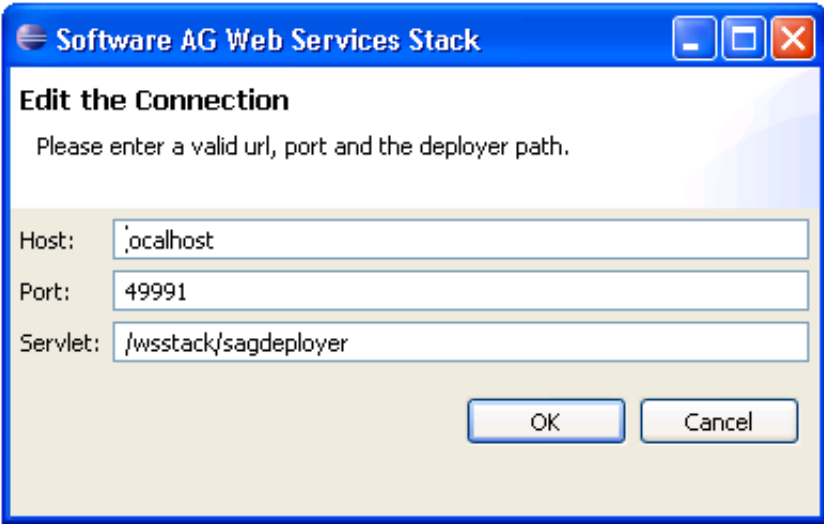
▶ **To set preferences for Web service deployment:**

1. Select the **Deployment** node.

The Deployment information for Web services is displayed. For example:



The current connections for deployment services are displayed. Use this window to:

Task	Procedure
<p>Add a new deployment connection</p>	<p>Select Add. The Add a New Connection window is displayed. For example:</p>  <p>Enter the host name, port number, and servlet address for the new connection and select OK. The connection is added to the list.</p>
<p>Edit a deployment connection</p>	<p>Select the connection in the list and select Edit. The connection is displayed for editing. For example:</p>  <p>Change the connection information and select OK to save the changes.</p>

Task	Procedure
Remove a deployment connection	Select the connection in the list and select Remove .
Change the sequence in which the connections are listed	Select the connection in the list and select Up or Down .

2. Accept or change the deployment connections for Web services.
3. Select **OK** to apply the changes and close the **Preferences** window.

Note:

To apply the changes without closing the window, select **Apply**.