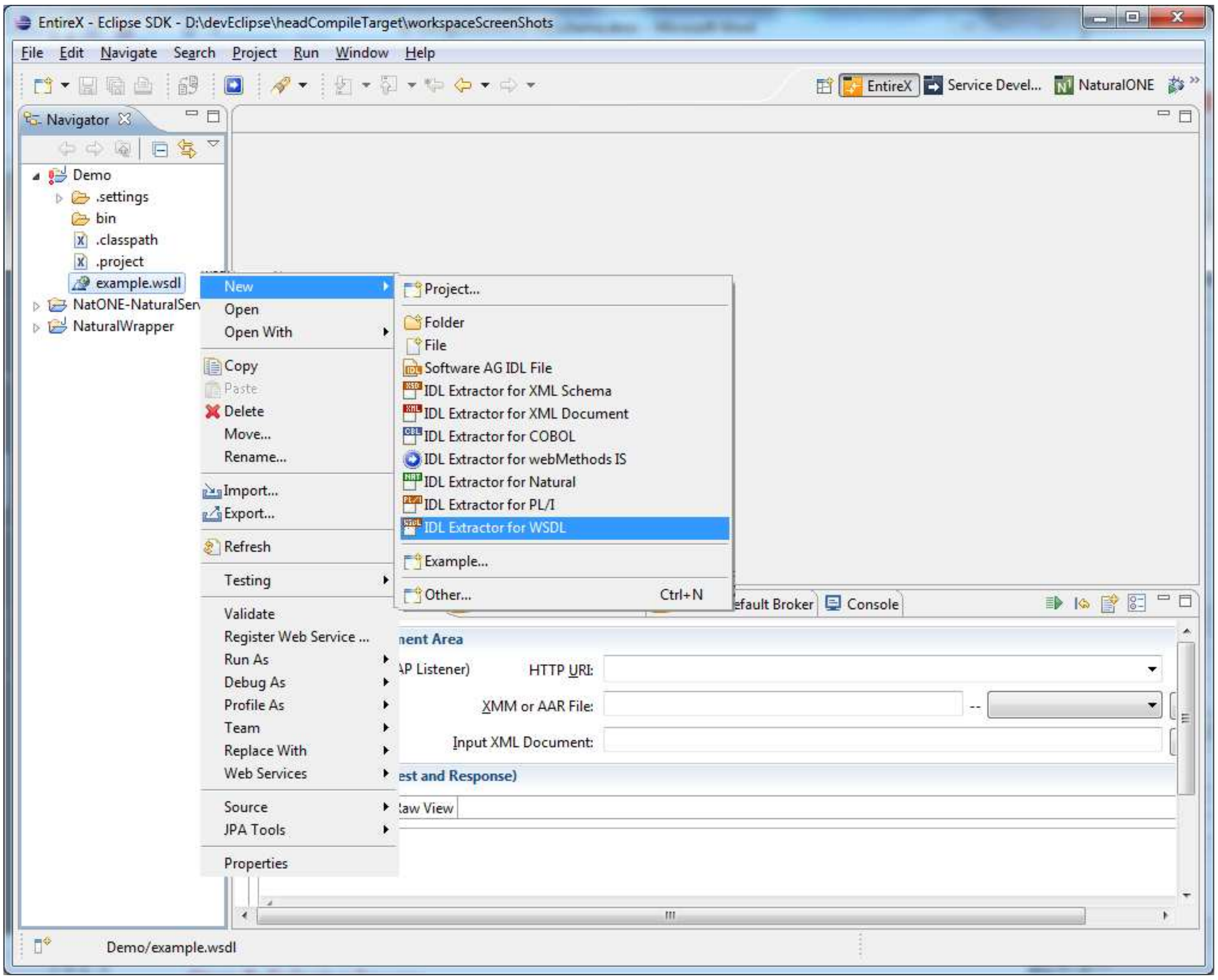
Using the Software AG IDL Extractor for WSDL

Warning:
If you modify the imported IDL file, do this only in the XML Mapping Editor to ensure the correct dependencies between the IDL and the related XMM file.

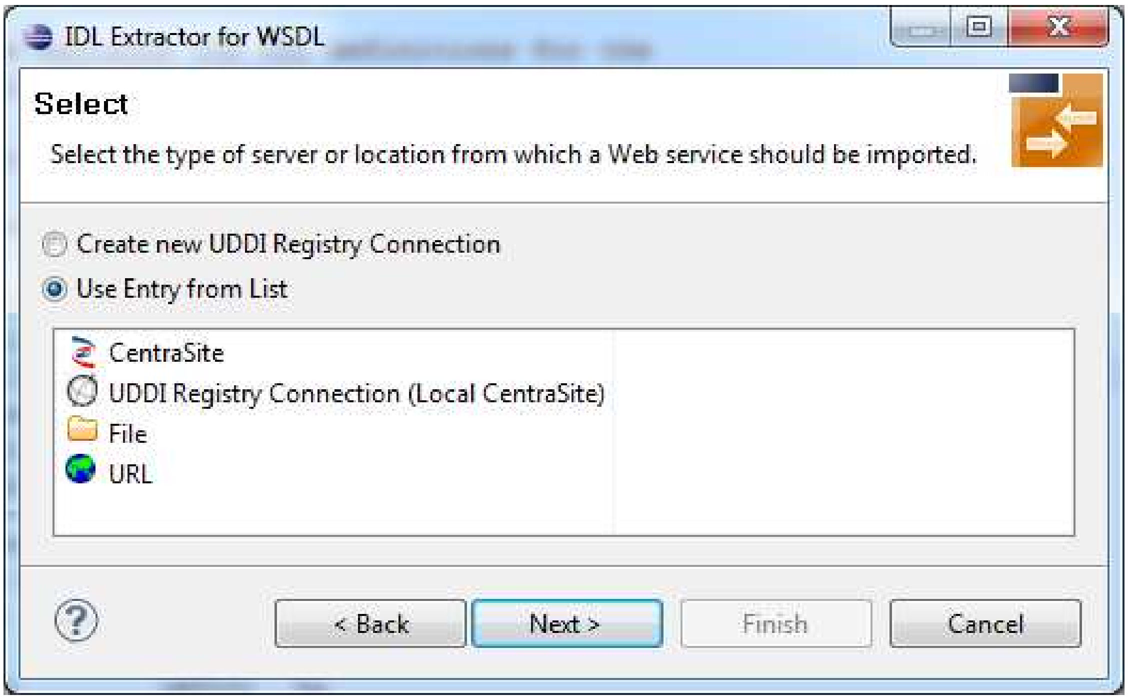
Step 1: Start the IDL Extractor for WSDL

Start the IDL Extractor for WSDL as any other Eclipse New wizard:



Step 2: Select a Source

Depending on the location of the WSDL document to analyze, choose one of the following options:


IDL Extractor for WSDL

Select

Select the type of server or location from which a Web service should be imported.

Create new UDDI Registry Connection
[✓ Use Entry from List]

CentraSite
UDDI Registry Connection (Local CentraSite)
File
URL

For **File**, **URL**, **CentraSite** and already defined UDDI registry connections, check the radio button **Use Entry from List**. To define additional connections to UDDI server, check the radio button **Create new UDDI Registry Connection**. UDDI registry connection are defined in the preferences; see also *UDDI Registration*.

- **CentraSite**
  If the WSDL source file to be extracted is available in CentraSite, continue with *Step 3a: Specify CentraSite Location*. If the connection is over HTTPS, see the *Note* below.

- **UDDI Registry Connection**
  If the WSDL source file to be extracted is accessible using a UDDI registry connection (UDDI server), continue with *Step 3b: Specify UDDI Server*. If the connection is over HTTPS, see the *Note* below.

- **File**
  If the WSDL source file to be extracted is available in your workspace and you have selected it, the file location will be entered in the wizard automatically in the next *Step 3c: Specify WSDL File*.

- **URL**
  Continue with *Step 3d: Specify WSDL File URL*. If the connection is over HTTPS, see the *Note* below.

  Notes:

  1. The supported URL protocols are FILE, FTP, HTTP, HTTPS and JAR, for example

     ```
     http://host/myservice?WSDL
     ```

  2. If the connection is over HTTPS, you need to set up HTTPS in Software AG Designer:

Define `trustStore` in Designer, for example with the following lines in file *eclipse.ini*

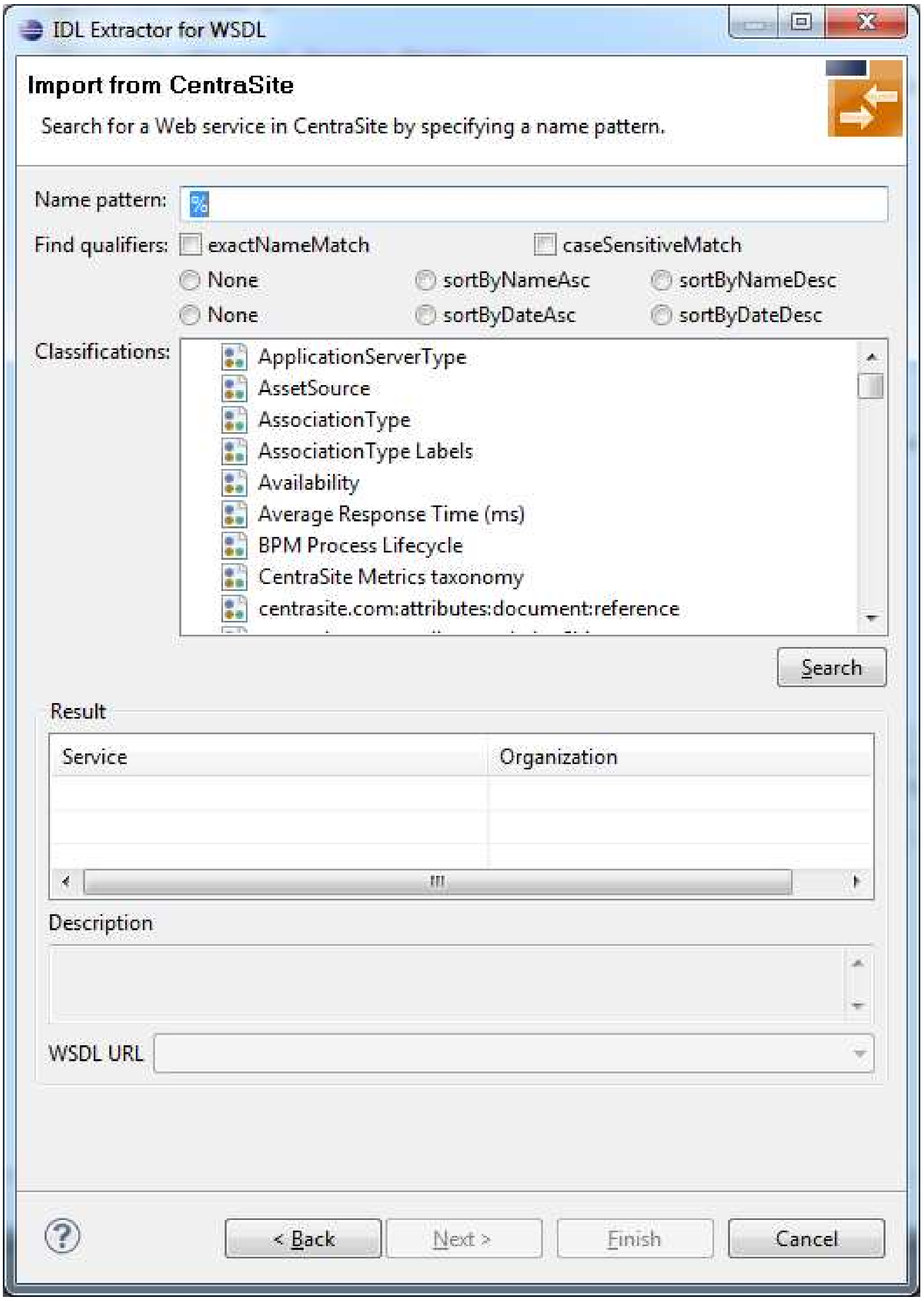
```
-Djavax.net.ssl.trustStore=<path to keystore>
-Djavax.net.ssl.trustStorePassword=<keystore password>
```

If hostname verification for certification is to be disabled, also add the line:

```
-Dcom.softwareag.entirex.ssl.hostnameverify=false
```

Step 3a: Specify CentraSite Location

When importing from CentraSite, the following screen is displayed:



IDL Extractor for WSDL

Import from CentraSite

Search for a Web service in CentraSite by specifying a name pattern.

Name pattern: %

Find qualifiers: ☐ exactNameMatch ☐ caseSensitiveMatch

○ None ○ sortByNameAsc ○ sortByNameDesc

○ None ○ sortByDateAsc ○ sortByDateDesc

Classifications:
- ApplicationServerType
- AssetSource
- AssociationType
- AssociationType Labels
- Availability
- Average Response Time (ms)
- BPM Process Lifecycle
- CentraSite Metrics taxonomy
- centrasite.com:attributes:document:reference

Search

Result

Service	Organization

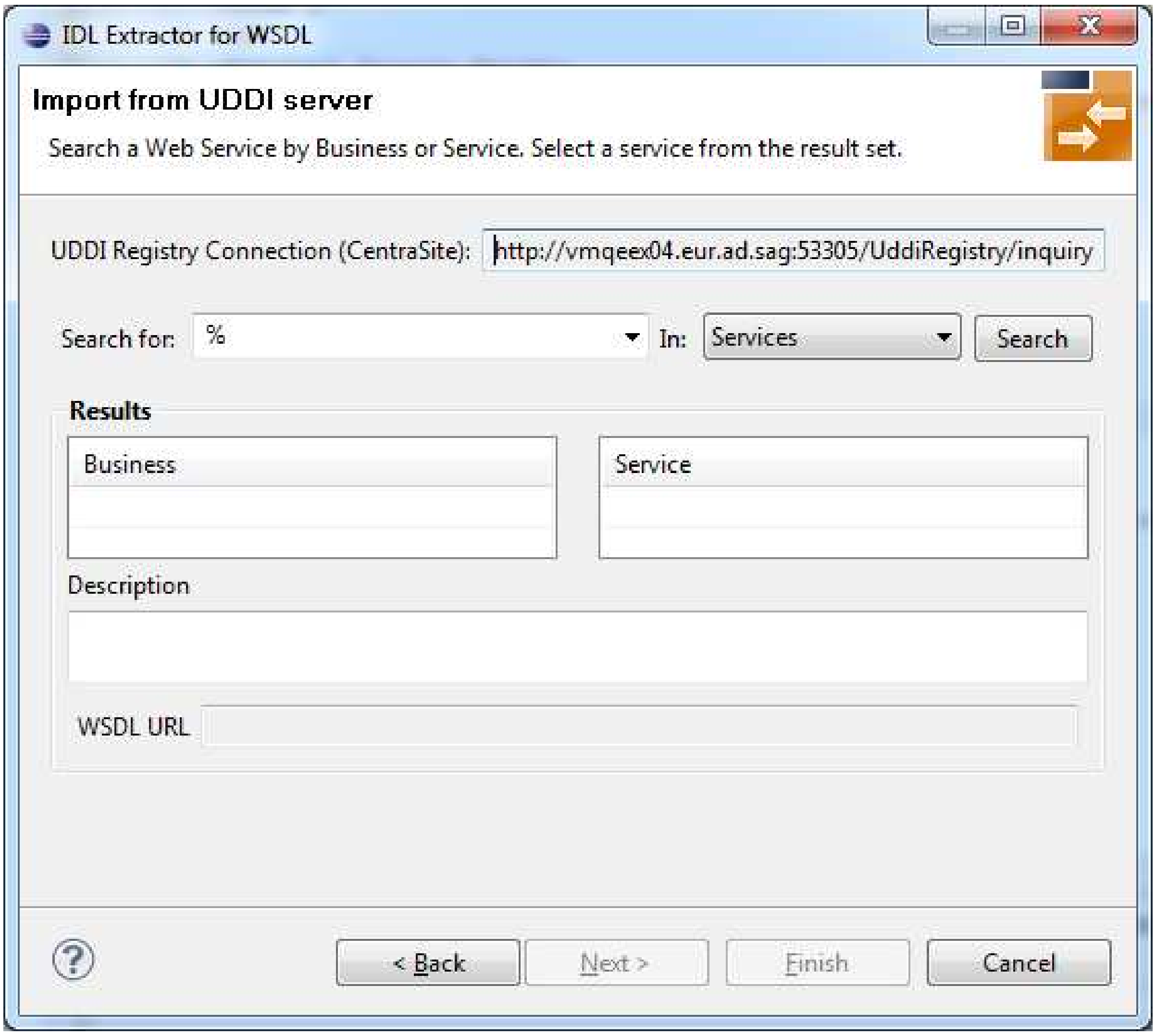
Description

WSDL URL

< Back   Next >   Finish   Cancel

Step 3b: Specify UDDI Server

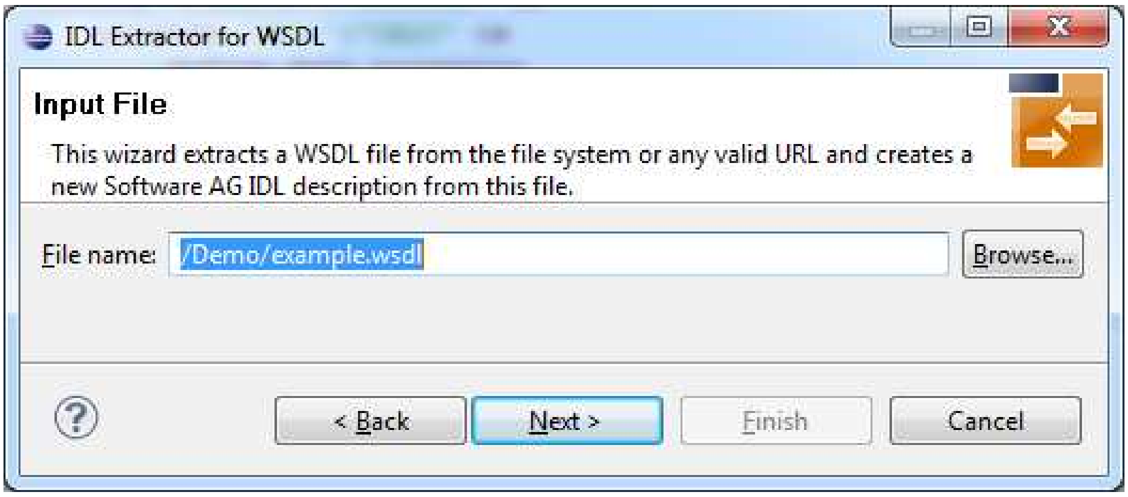
When importing from a UDDI server, the following screen is displayed:


IDL Extractor for WSDL
Import from UDDI server
Search a Web Service by Business or Service. Select a service from the result set.
UDDI Registry Connection (CentraSite): http://vmqeex04.eur.ad.sag:53305/UddiRegistry/inquiry
Search for: %
In: Services
Search
Results
Business
Service
Description
WSDL URL
< Back
Next >
Finish
Cancel

You can search for Businesses or Services. You can restrict your search using % as a wildcard, for example ex%. The search returns a list of service providers and their respective services. Select one service and continue with **Next**.

Step 3c: Specify WSDL File

If you selected the WSDL source file before you started the wizard, the file location is already present. Enter or browse for the WSDL source file. Continue with *Step 4: Specify Output Files*.


IDL Extractor for WSDL

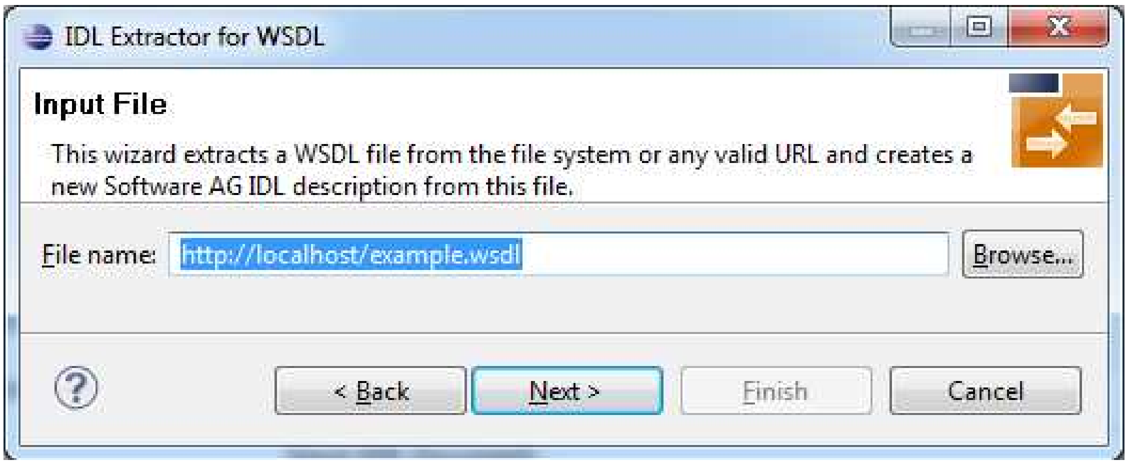
Input File

This wizard extracts a WSDL file from the file system or any valid URL and creates a new Software AG IDL description from this file.

File name: /Demo/example.wsdl

Step 3d: Specify WSDL File URL

Enter the URL for the WSDL source file.

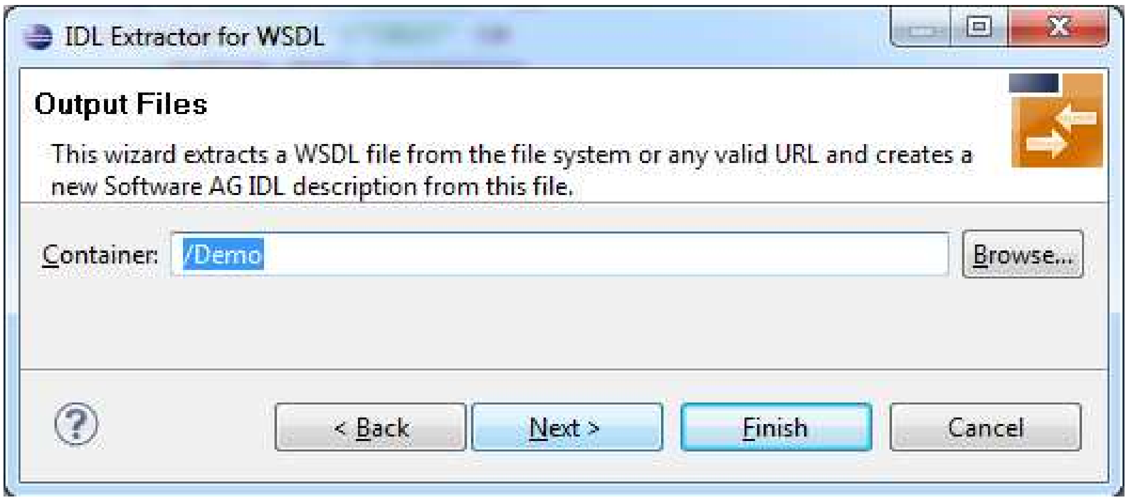

IDL Extractor for WSDL

Input File

This wizard extracts a WSDL file from the file system or any valid URL and creates a new Software AG IDL description from this file.

File name: http://localhost/example.wsdl

Step 4: Specify Output Files


IDL Extractor for WSDL

Output Files

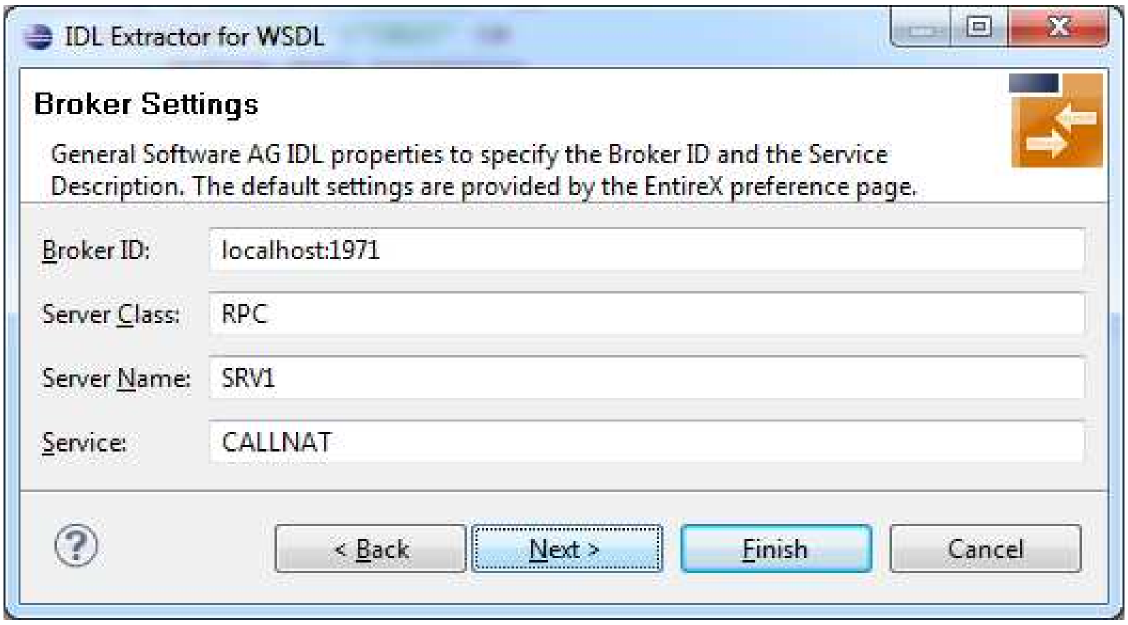
This wizard extracts a WSDL file from the file system or any valid URL and creates a new Software AG IDL description from this file.

Container: /Demo

Select the container where the IDL and XMM files will be stored.

Step 5: Specify Broker Settings

In the following screen you can optionally modify Broker settings.



IDL Extractor for WSDL

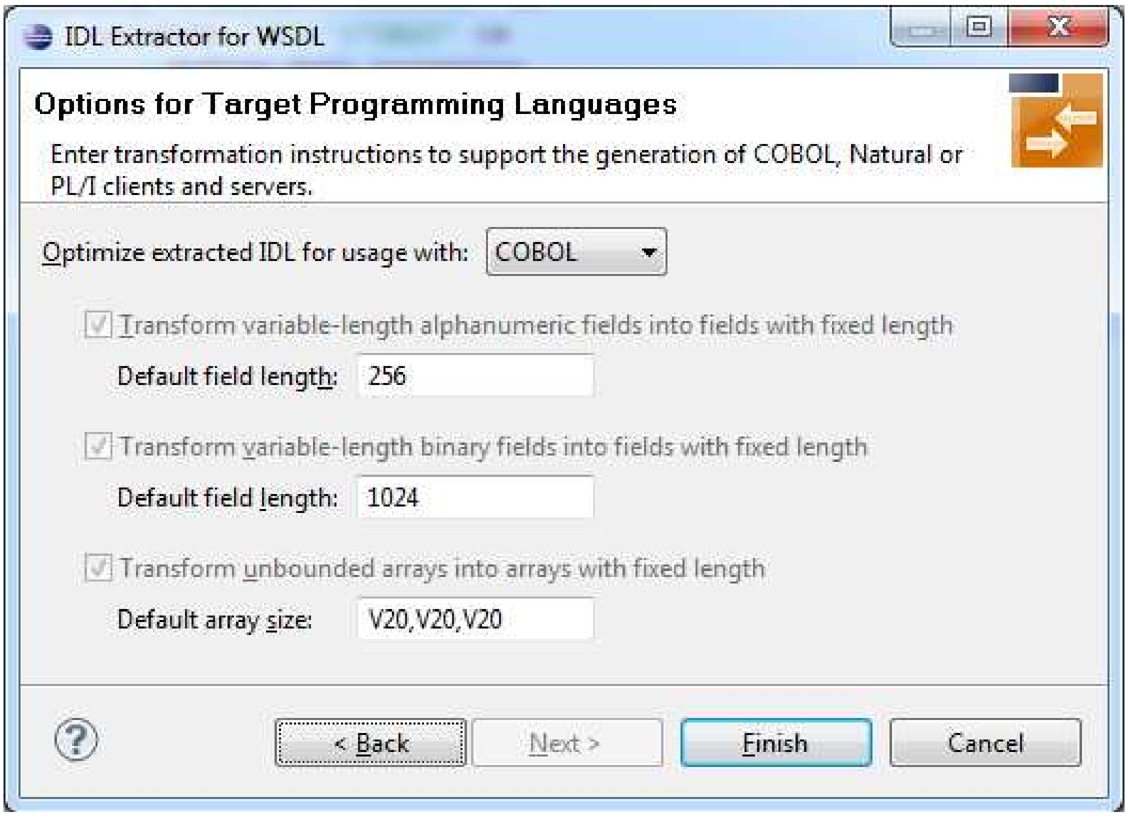
Broker Settings

General Software AG IDL properties to specify the Broker ID and the Service Description. The default settings are provided by the EntireX preference page.

Broker ID:	localhost:1971
Server Class:	RPC
Server Name:	SRV1
Service:	CALLNAT

Step 6: Specify Options for Target Programming Language

The **Options for Target Programming Language** page allows you to specify transformation rules for variable-length fields and unbounded arrays. This is required if you later use the COBOL Wrapper or PL/I Wrapper with the extracted IDL – otherwise COBOL or PL/I wrapping is not possible. If you later use the Natural Wrapper, transformation rules are optional. If they are used, the interface from a Natural point of view is more legacy-like, easier to use but with restrictions.


IDL Extractor for WSDL

Options for Target Programming Languages

Enter transformation instructions to support the generation of COBOL, Natural or PL/I clients and servers.

Optimize extracted IDL for usage with: COBOL

[✓] Transform variable-length alphanumeric fields into fields with fixed length

Default field length: 256

[✓] Transform variable-length binary fields into fields with fixed length

Default field length: 1024

[✓] Transform unbounded arrays into arrays with fixed length

Default array size: V20,V20,V20

With the transformation rules, you define default (maximum) lengths and sizes depending on the originating data types on the XML side. If you need different (maximum) lengths and sizes for fields with the same data type, use the XML Mapping Editor. See *Using the XML Mapping Editor*

Warning:
If you modify the imported IDL file, do this only in the XML Mapping Editor to ensure the correct dependencies between the IDL and the related XMM file.

Depending on the target programming language of your scenario, the available/possible transformation rules differ. Use the combo-box and choose the target programming language:

- COBOL
- Natural
- PL/I Client
- PL/I Server
- Other

COBOL

For generation of clients and servers with the *COBOL Wrapper*.

Variable-length fields and unbounded arrays with unlimited number of elements are not directly supported by COBOL. There are two possibilities to specify options:

- **Transform to Fixed-length COBOL Fields and Tables**
  Variable-length fields on the XML side are mapped to fixed-length COBOL data items, that is, they will always be padded (alphanumeric with trailing blanks; binary with x00). Unbounded arrays on the XML side are mapped to fixed-size COBOL tables, see *Tables with Fixed Size*. This means they will always be filled up to the maximum number of elements. To use this possibility, enter the length or size to define the restriction, for example 256, 1024 or 20.

- **Limit Variable-length Fields and Unbounded Arrays to a Maximum**
  For variable-length fields, EntireX provides a possibility to transform them into variable-length fields with a maximum length. See *IDL Data Types*, AVnumber and BVnumber under column Type and Length. In this case the variable-length fields are also mapped to fixed-length COBOL data items, but they will be trimmed (alphanumeric with blank, binary with x00) on the COBOL side. Unbounded arrays with a maximum are directly supported in COBOL in the form of COBOL tables with the `OCCURS DEPENDING on` clause, see *Tables with Variable Size* - *`DEPENDING ON` Clause*. Only filled elements are transferred. In this case the RPC message size is reduced compared with the alternative *Transform to Fixed-length COBOL Fields and Tables* above. To use this possibility, enter a leading V-character before the limited length or limited size of unbounded arrays, such as V256, V1024 or V20.

Natural

For generation of clients and servers with the *Natural Wrapper*.

Variable-length fields and unbounded arrays with unlimited number of elements are directly supported by Natural. As an alternative, EntireX also provides the possibility to transform to a more legacy-like interface with fixed length.

- **Transform to Fixed-length Fields and Fixed-size Arrays on the Natural Side**
  Variable-length fields on the XML side are mapped to fixed-length Natural data types, that is, they will always be padded (alphanumeric with trailing blanks; binary with x00). Unbounded arrays on the XML side are mapped to fixed-length Natural arrays, that is, they will always be filled up to the maximum number of elements. Using this possibility you benefit from easier and simpler Natural programming. To use this possibility, check the check boxes and enter the restricted length for variable-length alphanumeric fields, such as 253, variable-length binary fields such as 126, and the restricted size, for example 20,20,20 for unbounded arrays.

- **Transform to Variable-length Fields and Variable-size Arrays on the Natural Side**
  Variable-length fields on the XML side are mapped to Natural `DYNAMIC` data types. No padding occurs on the Natural side. Unbounded arrays on the XML side are mapped to Natural X-Arrays. Only filled elements are transferred. In this case the RPC message size is reduced compared with the alternative *Transform to Fixed-length Fields and Fixed-size Arrays on the Natural Side* above. To use this possibility, clear the check boxes.

PL/I Client

For generation of clients with the *PL/I Wrapper*. The following possibilities exist in scenarios with PL/I clients:

- **Transform to Fixed-length Fields and Arrays**
  Variable-length fields on the XML side are mapped to fixed-length PL/I data items, that is, they will always be padded (alphanumeric with trailing blanks; binary with x00). Unbounded arrays on the XML side are mapped to fixed-size PL/I arrays, see *Arrays* under *PL/I to IDL Mapping*. This means they will always be filled up to the maximum number of elements. To use this possibility, enter the length or size to define the restriction, for example 256, 1024 or 20.

- **Limit Variable-length Fields to a Maximum**
  As an alternative, variable-length fields can be mapped to PL/I data type with the attribute `VARYING`. See also *IDL Data Types* AVnumber and BVnumber under column Type and Length. In this case no padding occurs on the PL/I side. To use this possibility, enter a leading V-character before the limited length, such as V256 or V1024.

  Note:
  This alternative does not exist for unbounded arrays.

PL/I Server

For generation of servers with the *PL/I Wrapper*. The following possibilities exist in scenarios with PL/I servers:

- **Transform to Fixed-length Fields and Arrays**
  Variable-length fields on the XML side are mapped to fixed-length PL/I data items, that is, they will always be padded (alphanumeric with trailing blanks; binary with x00). Unbounded arrays on the XML side are mapped to fixed-size PL/I arrays, see *Arrays* under *PL/I to IDL Mapping* in the IDL Extractor for PL/I documentation. This means they will always be filled up to the maximum number of elements. To use this possibility, enter the length or size to define the restriction, for example 256, 1024 or 20.

- **Limit Variable-length Fields to a Maximum**
  As an alternative, variable-length fields can be mapped to PL/I data type with the attribute `VARYING`. See also *IDL Data Types*, AVnumber and BVnumber under column Type and Length. In this case no padding occurs on the PL/I side. To use this possibility, enter a leading V-character before the limited length, such as V256 or V1024.

  Note:
  This alternative does not exist for unbounded arrays.

- **Transform to Variable-size Arrays on the PL/I Side**
  As an alternative for unbounded arrays on the XML side, they can be mapped to PL/I arrays using `(*,*,*)` notation. Only filled elements are transferred. Note that PL/I does not allow resizing of these data types and arrays. In this case the RPC message size is reduced compared with the first alternative *Transform to Fixed-length PL/I Fields and Arrays* above. To use this possibility, uncheck the check box.

  Note:
  This alternative does not exist for variable-length fields.

Other

If you later use wrappers other than the COBOL Wrapper, Natural Wrapper or PL/I Wrapper, no transformation rules are required. Variable-length fields and unbounded arrays are extracted as is; there are no restrictions regarding data length that can be transferred in variable-length fields and the number of elements that can be transferred in unbounded arrays.

Press **Finish** to start extraction.

Extraction Result

When the operation is completed, the IDL file is opened with the *Software AG IDL Editor*.

If the WSDL source files to extract from contain parameters that cannot be mapped to IDL parameters, an IDL file with incorrect IDL syntax is created. The unsupported parameters lead to IDL parameters of data type Error, which is not supported. In the **Problems View** you get a marker for the first error in the IDL file.