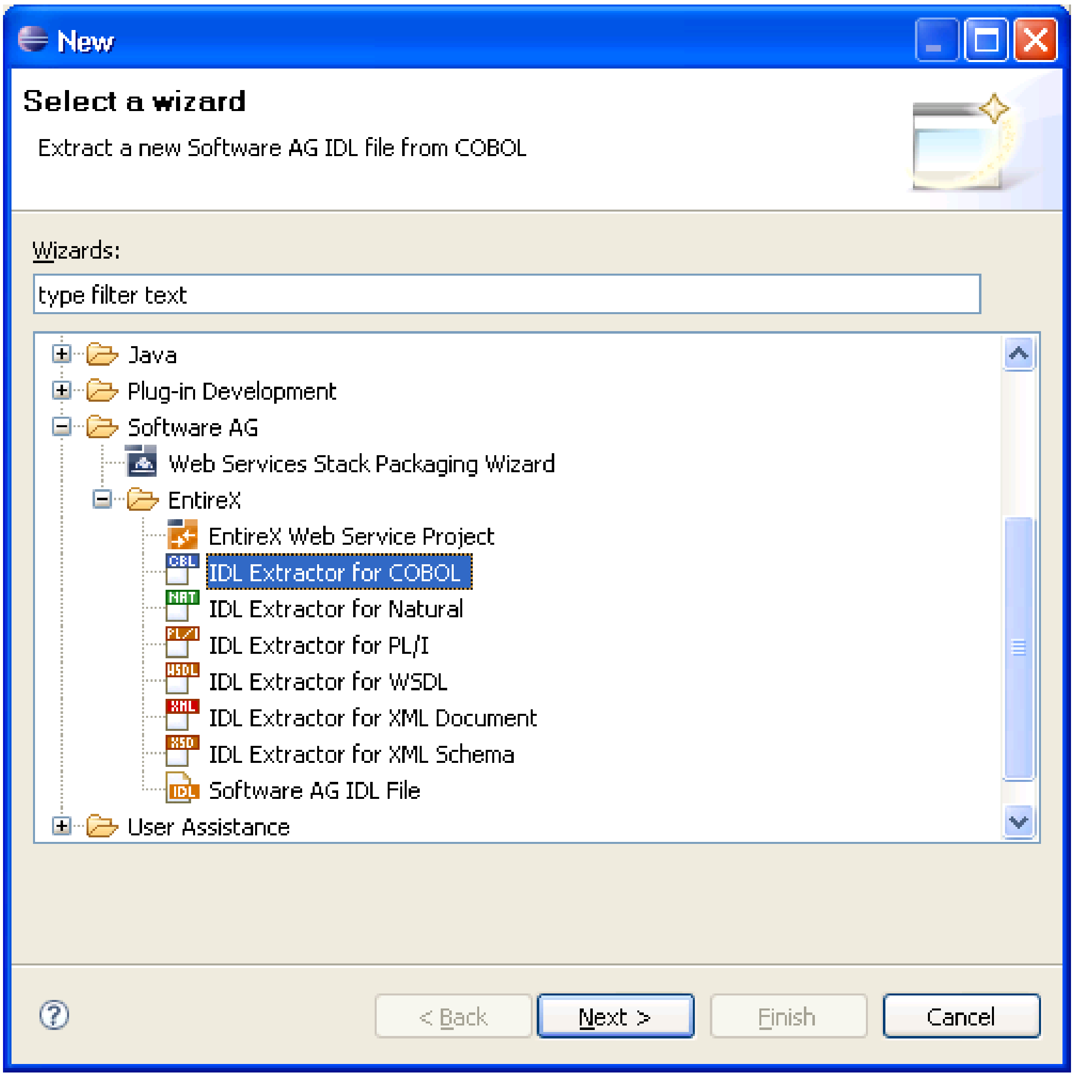
Scenario I: Create New IDL and Server Mapping Files

- Step 1: Start the IDL Extractor for COBOL Wizard
- Step 2: Select a COBOL Extractor Environment or Create a New One
- Step 3: Select the COBOL Source
- Step 4: Define the Extraction Settings and Start Extraction
- Step 5: Select the COBOL Interface and Map to IDL Interface
- Step 6: Finishing the Mapping Editor
- Step 7: Validate the Extraction and Test the IDL File

Step 1: Start the IDL Extractor for COBOL Wizard



Select a wizard

Extract a new Software AG IDL file from COBOL

Wizards: type filter text

To continue, press **Next** and continue with *Step 2: Select a COBOL Extractor Environment or Create a New One*.

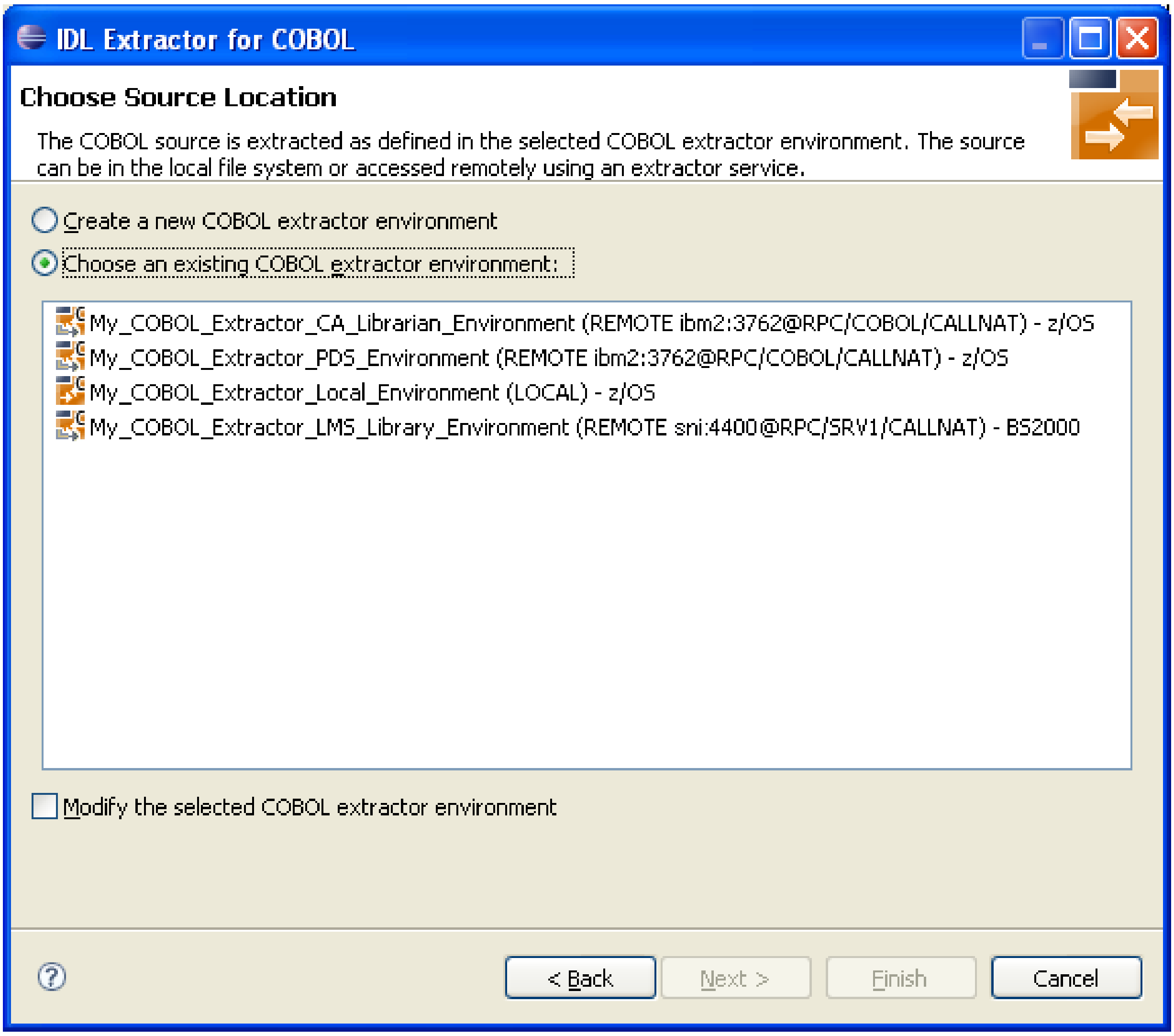
Step 2: Select a COBOL Extractor Environment or Create a New One

If no COBOL extractor environments are defined, you only have the option to create a new environment. An IDL Extractor for COBOL environment provides defaults for the extraction and refers to COBOL programs and copybooks that are

- stored locally on the same machine where the EntireX Workbench is running: a *local* COBOL extractor environment

or

- stored remotely on a host computer: a *remote* COBOL extractor environment. The extractor service is required to access COBOL programs and copybooks remotely with a remote COBOL extractor environment. The extractor service is supported on platforms z/OS and BS2000/OSD. See *Extractor Service* in the z/OS Batch | IMS | BS2000/OSD Batch RPC Server documentation.



IDL Extractor for COBOL

Choose Source Location

The COBOL source is extracted as defined in the selected COBOL extractor environment. The source can be in the local file system or accessed remotely using an extractor service.

○ Create a new COBOL extractor environment

● Choose an existing COBOL extractor environment:

My_COBOL_Extractor_CA_Librarian_Environment (REMOTE ibm2:3762@RPC/COBOL/CALLNAT) - z/OS
My_COBOL_Extractor_PDS_Environment (REMOTE ibm2:3762@RPC/COBOL/CALLNAT) - z/OS
My_COBOL_Extractor_Local_Environment (LOCAL) - z/OS
My_COBOL_Extractor_LMS_Library_Environment (REMOTE sni:4400@RPC/SRV1/CALLNAT) - BS2000

□ Modify the selected COBOL extractor environment

This page offers the following options:

To select an existing local COBOL extractor environment

1. Check radio button **Choose an existing COBOL extractor environment** and select a local COBOL extractor environment.
2. Continue with *Step 3: Select the COBOL Source* below.

To select an existing remote COBOL extractor environment

1. Check radio button **Choose an existing COBOL extractor environment** and select a remote COBOL extractor environment.
2. Continue with *Step 3: Select the COBOL Source* below.

To create a new local COBOL extractor environment

1. Check radio button **Create a new COBOL extractor environment**.
2. Follow the instructions in the Preferences section under *Create New Local Extractor Environment* (z/OS, z/VSE, BS2000/OSD and IBM i) | Micro Focus (UNIX and Windows) in the IDL Extractor for COBOL documentation.
3. Continue with *Step 3: Select the COBOL Source* below.

To create a new remote COBOL extractor environment

1. Check radio button **Create a new COBOL extractor environment**.
2. Follow the instructions in the Preferences section under *Create New Remote Extractor Environment* z/OS | BS2000/OSD in the IDL Extractor for COBOL documentation.
3. Continue with *Step 3: Select the COBOL Source* below.

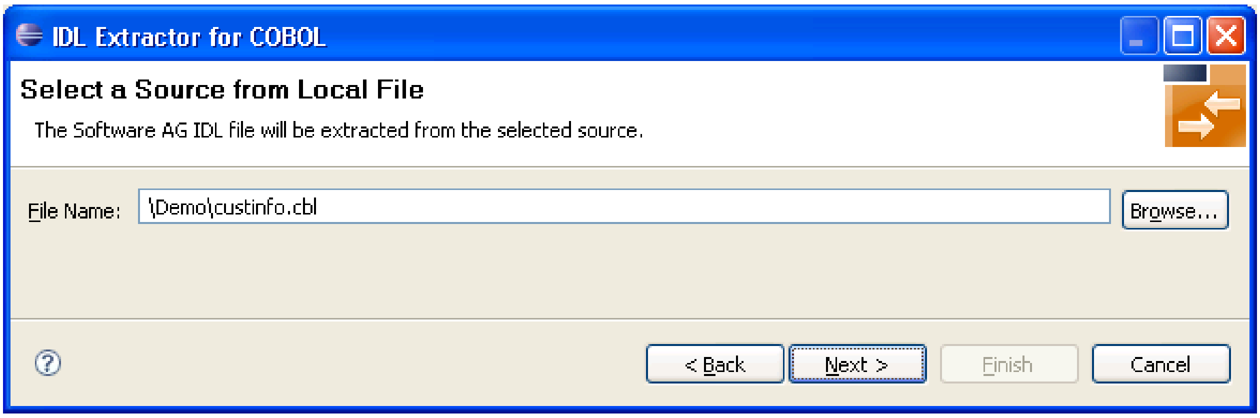
Step 3: Select the COBOL Source

Selecting the COBOL source is different depending on whether the COBOL source is stored locally on the same machine where the *EntireX Workbench* is running, or on a remote host computer.

- Selecting a COBOL Source Stored Locally
- Selecting a Member from a Partitioned Data Set on Remote Host (z/OS)
- Selecting a Member from a CA Librarian Data Set on Remote Host (z/OS)
- Selecting a Member Archive Level from a CA Librarian Data Set on Remote Host (z/OS)
- Selecting an Element (S) from an LMS Library on Remote Host (BS2000/OSD)

Selecting a COBOL Source Stored Locally

In step 2 above you selected or created a local extractor environment for z/OS. If you select a local COBOL extractor environment, you can browse for the COBOL program in the local file system. If you selected the COBOL source file before you started the wizard, and do not have a directory defined in the preferences of your Local Extractor Environment, the file location is already present. See *Create New Local Extractor Environment* (z/OS, z/VSE, BS2000/OSD and IBM i) | Micro Focus (UNIX and Windows) in the IDL Extractor for COBOL documentation. To browse for the COBOL source file, choose **Browse**.



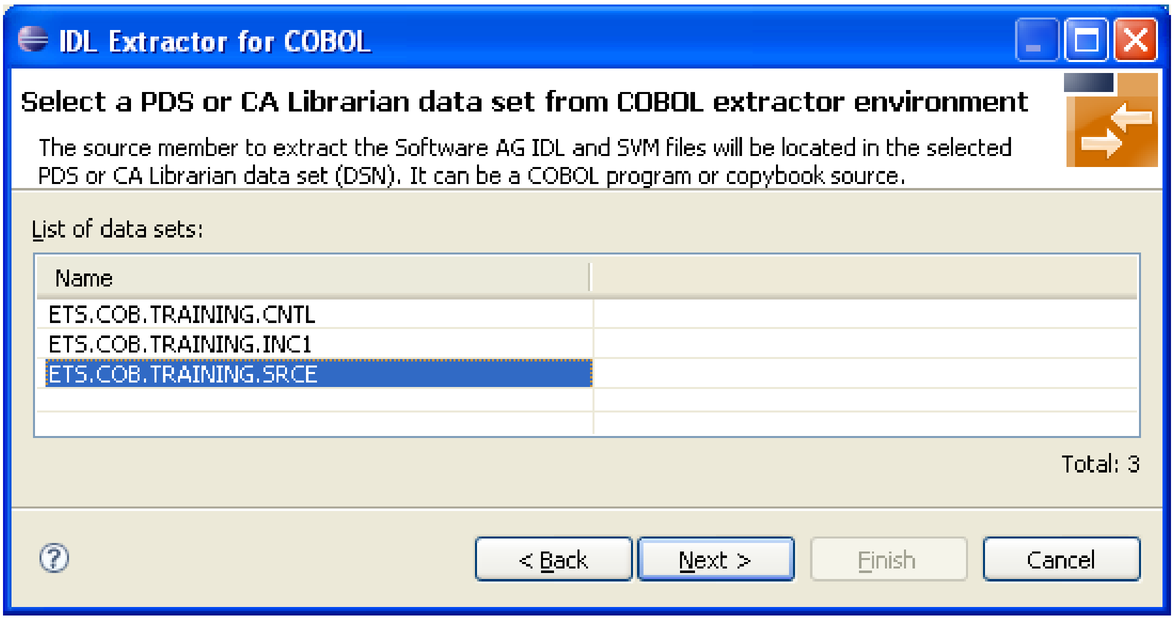
Select a Source from Local File

The Software AG IDL file will be extracted from the selected source.

File Name: \Demo\custinfo.cbl

Selecting a Member from a Partitioned Data Set on Remote Host (z/OS)

In step 2 above you selected or created a remote extractor environment. The following page offers all data sets starting with the high-level qualifier defined in the **Filter Settings** of the remote extractor environment. See *Create New Remote Extractor Environment (z/OS)* under *IDL Extractor for COBOL Preferences*.



Select a PDS or CA Librarian data set from COBOL extractor environment

The source member to extract the Software AG IDL and SVM files will be located in the selected PDS or CA Librarian data set (DSN). It can be a COBOL program or copybook source.

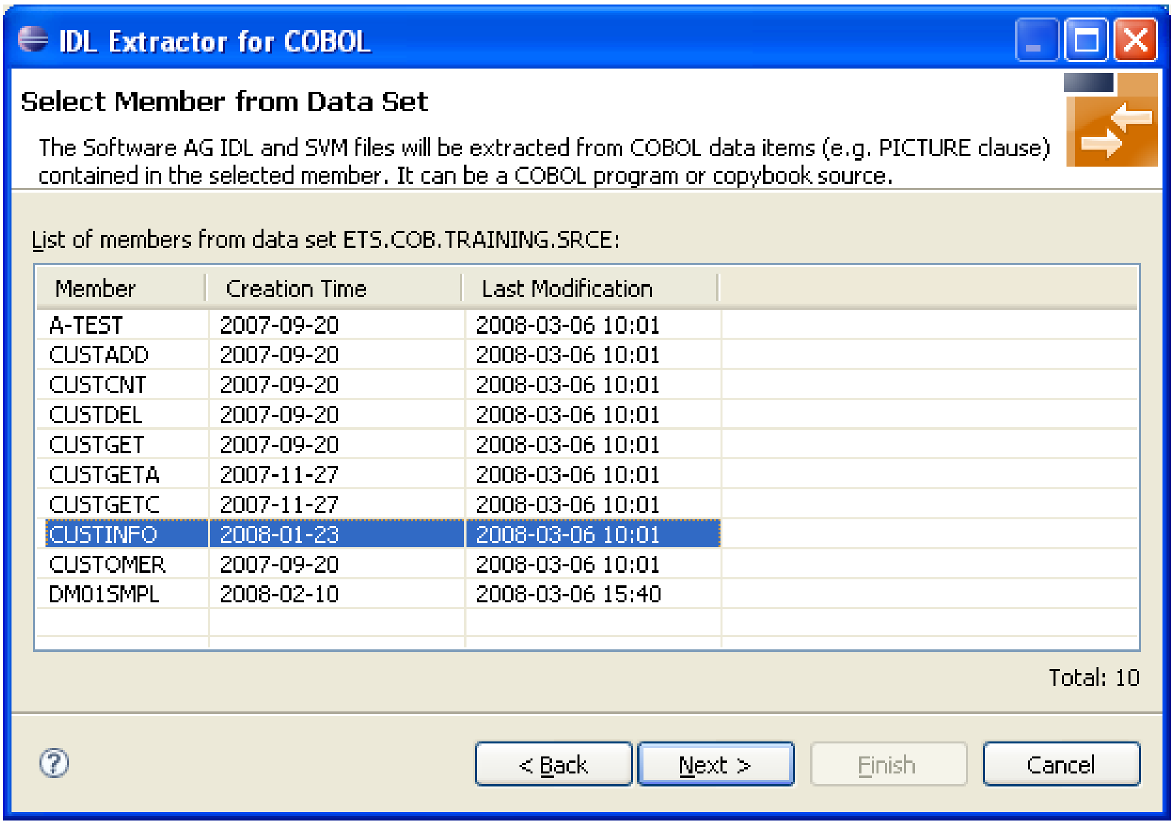
List of data sets:

Name
ETS.COB.TRAINING.CNTL
ETS.COB.TRAINING.INC1
ETS.COB.TRAINING.SRCE

Total: 3

Select the partitioned data set from which you want to extract and choose **Next**. Proceed depending on the selected data set type. See *Selecting a Member from a Partitioned Data Set on Remote Host (z/OS)*.

The following page offers all members contained in the partitioned data set selected in the previous step, starting with the member name prefix defined in the **Filter Settings** of the remote extractor environment. See *Step 3: Define the Remote Extractor Environment* under *IDL Extractor for COBOL Preferences*.



Select Member from Data Set

The Software AG IDL and SVM files will be extracted from COBOL data items (e.g. PICTURE clause) contained in the selected member. It can be a COBOL program or copybook source.

List of members from data set ETS.COB.TRAINING.SRCE:

Member	Creation Time	Last Modification
A-TEST	2007-09-20	2008-03-06 10:01
CUSTADD	2007-09-20	2008-03-06 10:01
CUSTCNT	2007-09-20	2008-03-06 10:01
CUSTDEL	2007-09-20	2008-03-06 10:01
CUSTGET	2007-09-20	2008-03-06 10:01
CUSTGETA	2007-11-27	2008-03-06 10:01
CUSTGETC	2007-11-27	2008-03-06 10:01
CUSTINFO	2008-01-23	2008-03-06 10:01
CUSTOMER	2007-09-20	2008-03-06 10:01
DM01SMPL	2008-02-10	2008-03-06 15:40

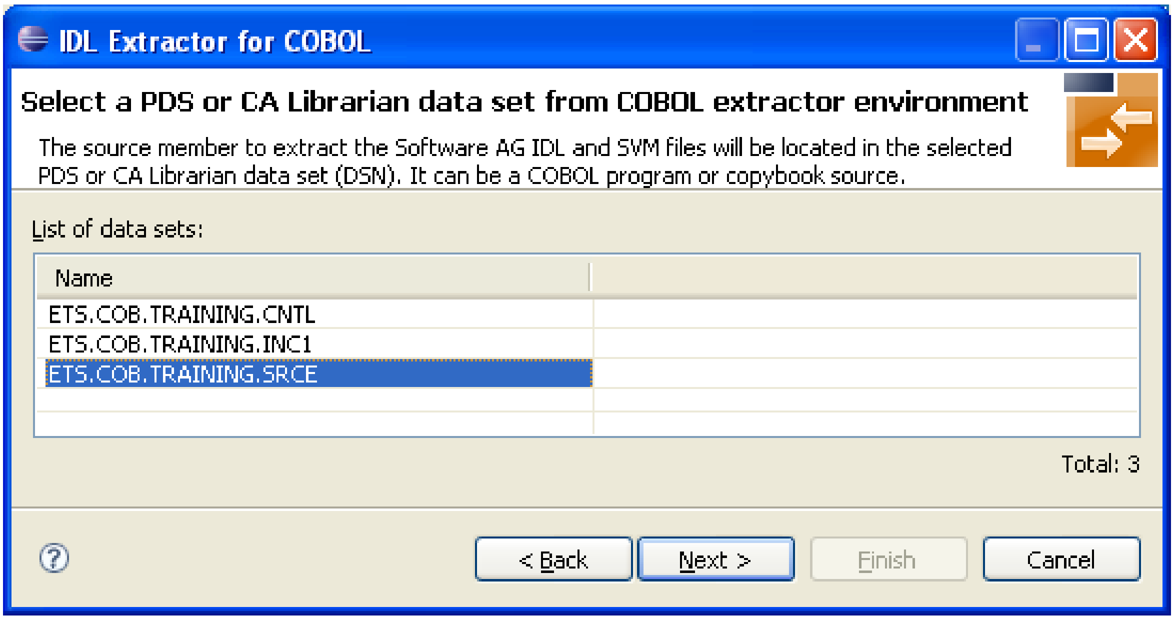
Total: 10

Select the member from which you want to extract. You can select only one COBOL source. The source can be a COBOL program or a COBOL copybook.

Choose **Next** and continue with *Step 4: Define the Extraction Settings and Start Extraction* below.

Selecting a Member from a CA Librarian Data Set on Remote Host (z/OS)

In step 2 above you selected or created a remote extractor environment. The following page offers all data sets starting with the high-level qualifier defined in the **Filter Settings** of the remote extractor environment. See *Create New Remote Extractor Environment (z/OS)* under *IDL Extractor for COBOL Preferences*.



IDL Extractor for COBOL

Select a PDS or CA Librarian data set from COBOL extractor environment

The source member to extract the Software AG IDL and SVM files will be located in the selected PDS or CA Librarian data set (DSN). It can be a COBOL program or copybook source.

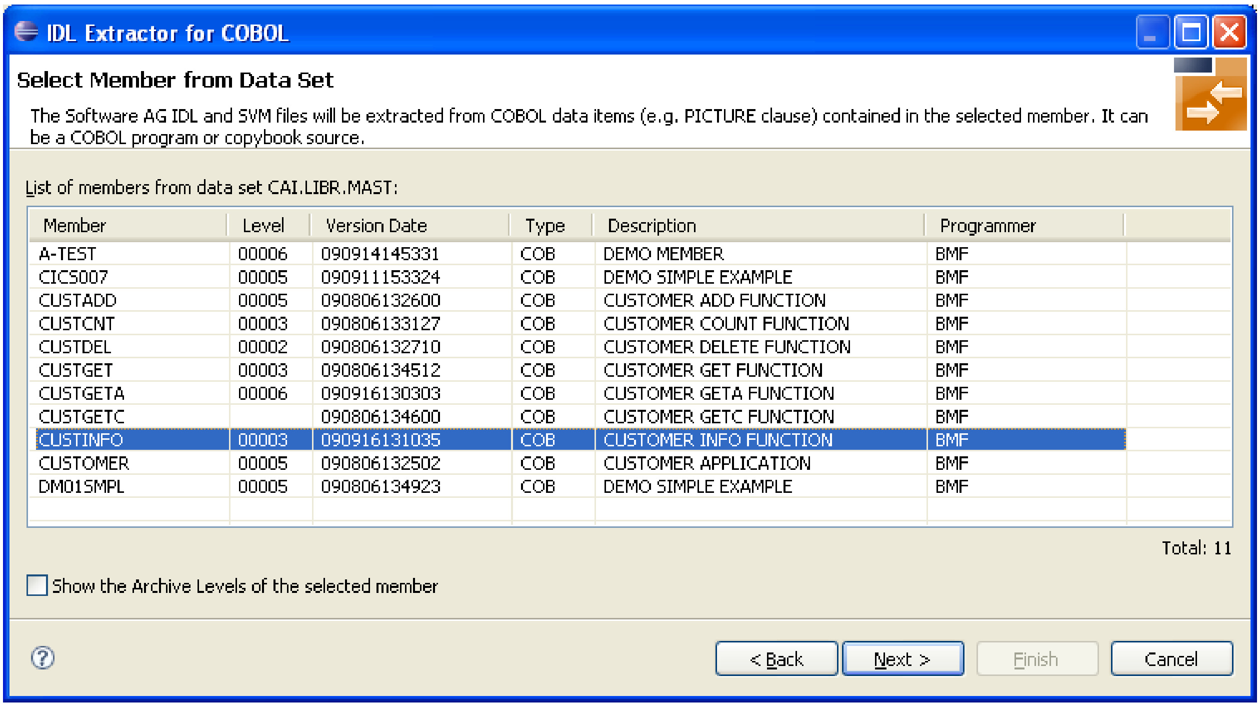
List of data sets:

Name	
ETS.COB.TRAINING.CNTL	
ETS.COB.TRAINING.INC1	
ETS.COB.TRAINING.SRCE	

Total: 3

Select the CA Librarian data set from which you want to extract and choose **Next**. Proceed depending on the selected data set type. See *Selecting a Member from a CA Librarian Data Set on Remote Host (z/OS)*.

The following page offers all members contained in the CA Librarian data set selected in the previous step, starting with the member name prefix defined in the **Filter Settings** of the remote extractor environment. See *Step 3: Define the Remote Extractor Environment* under *IDL Extractor for COBOL Preferences*.



Select Member from Data Set

The Software AG IDL and SVM files will be extracted from COBOL data items (e.g. PICTURE clause) contained in the selected member. It can be a COBOL program or copybook source.

List of members from data set CAI.LIBR.MAST:

Member	Level	Version Date	Type	Description	Programmer
A-TEST	00006	090914145331	COB	DEMO MEMBER	BMF
CICS007	00005	090911153324	COB	DEMO SIMPLE EXAMPLE	BMF
CUSTADD	00005	090806132600	COB	CUSTOMER ADD FUNCTION	BMF
CUSTCNT	00003	090806133127	COB	CUSTOMER COUNT FUNCTION	BMF
CUSTDEL	00002	090806132710	COB	CUSTOMER DELETE FUNCTION	BMF
CUSTGET	00003	090806134512	COB	CUSTOMER GET FUNCTION	BMF
CUSTGETA	00006	090916130303	COB	CUSTOMER GETA FUNCTION	BMF
CUSTGETC		090806134600	COB	CUSTOMER GETC FUNCTION	BMF
CUSTINFO	00003	090916131035	COB	CUSTOMER INFO FUNCTION	BMF
CUSTOMER	00005	090806132502	COB	CUSTOMER APPLICATION	BMF
DM01SMPL	00005	090806134923	COB	DEMO SIMPLE EXAMPLE	BMF

Total: 11

☐ Show the Archive Levels of the selected member

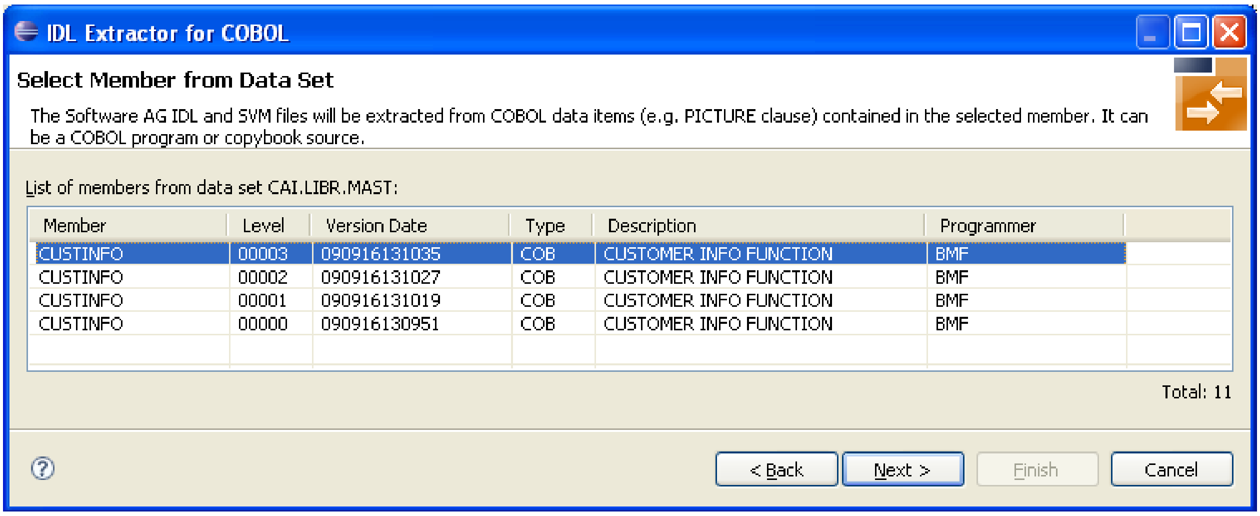
You can select only one COBOL source. The source can be a COBOL program or a COBOL copybook. If you want to extract from

- the latest (current) version of the member, select the member, choose **Next** and continue with *Step 4: Define the Extraction Settings and Start Extraction* below.

- a previous (archived) version of the member, check the box **Show the Archive Levels of the selected member**, select the member, choose **Next** and continue with *Selecting a Member Archive Level from a CA Librarian Data Set on Remote Host (z/OS)*.

Selecting a Member Archive Level from a CA Librarian Data Set on Remote Host (z/OS)

The following page offers all archive levels of the previously selected member.



Select Member from Data Set

The Software AG IDL and SVM files will be extracted from COBOL data items (e.g. PICTURE clause) contained in the selected member. It can be a COBOL program or copybook source.

List of members from data set CAI.LIBR.MAST:

Member	Level	Version Date	Type	Description	Programmer
CUSTINFO	00003	090916131035	COB	CUSTOMER INFO FUNCTION	BMF
CUSTINFO	00002	090916131027	COB	CUSTOMER INFO FUNCTION	BMF
CUSTINFO	00001	090916131019	COB	CUSTOMER INFO FUNCTION	BMF
CUSTINFO	00000	090916130951	COB	CUSTOMER INFO FUNCTION	BMF

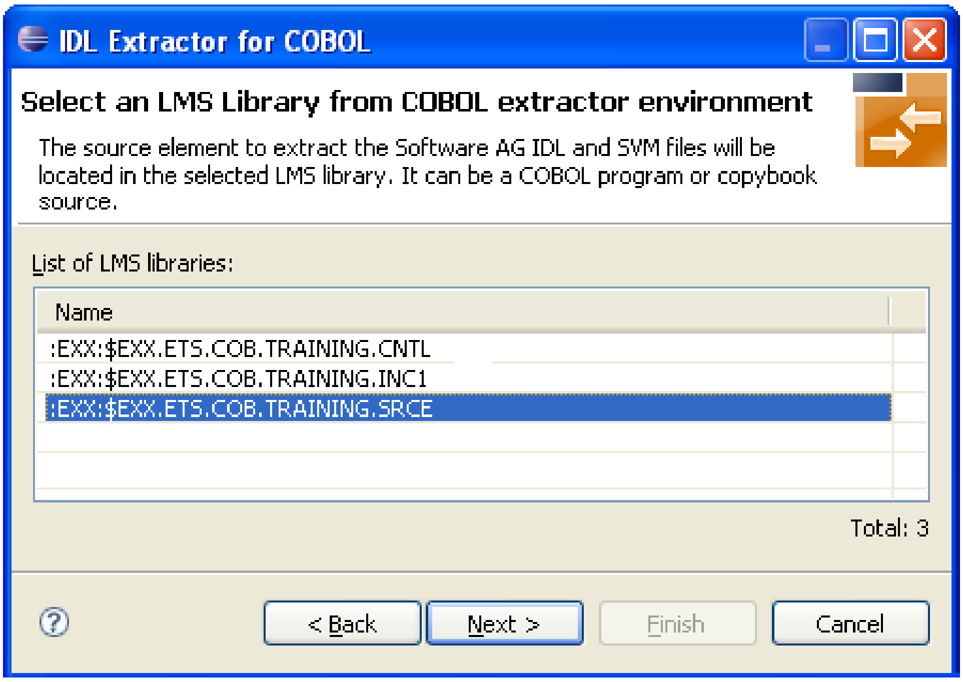
Total: 11

Select the member from which you want to extract. You can select only one archive level. Choose **Next** and continue with *Step 4: Define the Extraction Settings and Start Extraction* below.

Selecting an Element (S) from an LMS Library on Remote Host (BS2000/OSD)

In step 2 above you selected or created a remote extractor environment.

The following page offers all data sets starting with the high-level qualifier defined in the **Filter Settings** of the remote extractor environment. See *Create New Remote Extractor Environment (BS2000/OSD)* under *IDL Extractor for COBOL Preferences* .



Select an LMS Library from COBOL extractor environment

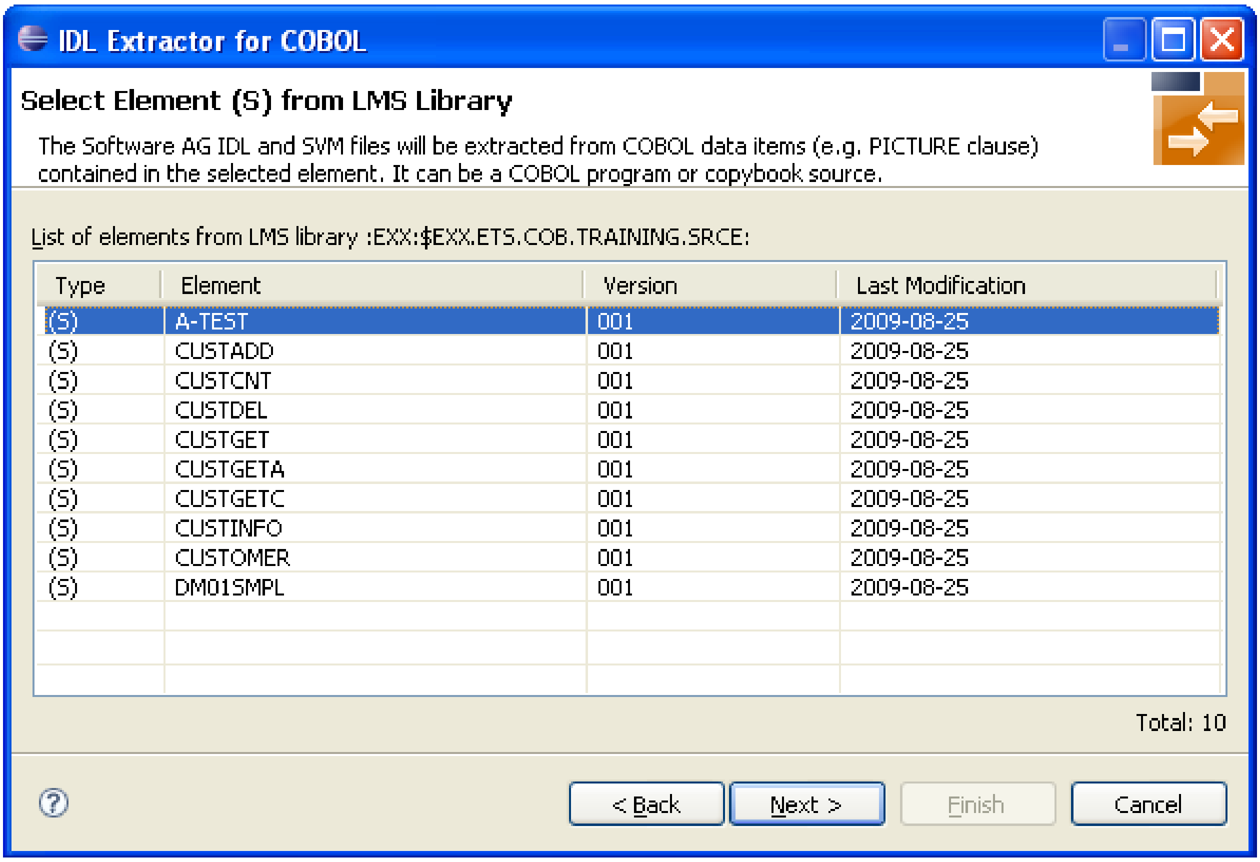
The source element to extract the Software AG IDL and SVM files will be located in the selected LMS library. It can be a COBOL program or copybook source.

List of LMS libraries:

Name
:EXX:$EXX.ETS.COB.TRAINING.CNTL
:EXX:$EXX.ETS.COB.TRAINING.INC1
:EXX:$EXX.ETS.COB.TRAINING.SRCE

Total: 3

The following page offers all elements contained in the LMS library selected in the previous step, starting with the member name prefix defined in the Filter Settings of the remote extractor environment. See *Step 3: Define the Remote Extractor Environment* under *IDL Extractor for COBOL Preferences*.



Select Element (S) from LMS Library

The Software AG IDL and SVM files will be extracted from COBOL data items (e.g. PICTURE clause) contained in the selected element. It can be a COBOL program or copybook source.

List of elements from LMS library :EXX:$EXX.ETS.COB.TRAINING.SRCE:

Type	Element	Version	Last Modification
(S)	A-TEST	001	2009-08-25
(S)	CUSTADD	001	2009-08-25
(S)	CUSTCNT	001	2009-08-25
(S)	CUSTDEL	001	2009-08-25
(S)	CUSTGET	001	2009-08-25
(S)	CUSTGETA	001	2009-08-25
(S)	CUSTGETC	001	2009-08-25
(S)	CUSTINFO	001	2009-08-25
(S)	CUSTOMER	001	2009-08-25
(S)	DM01SMPL	001	2009-08-25

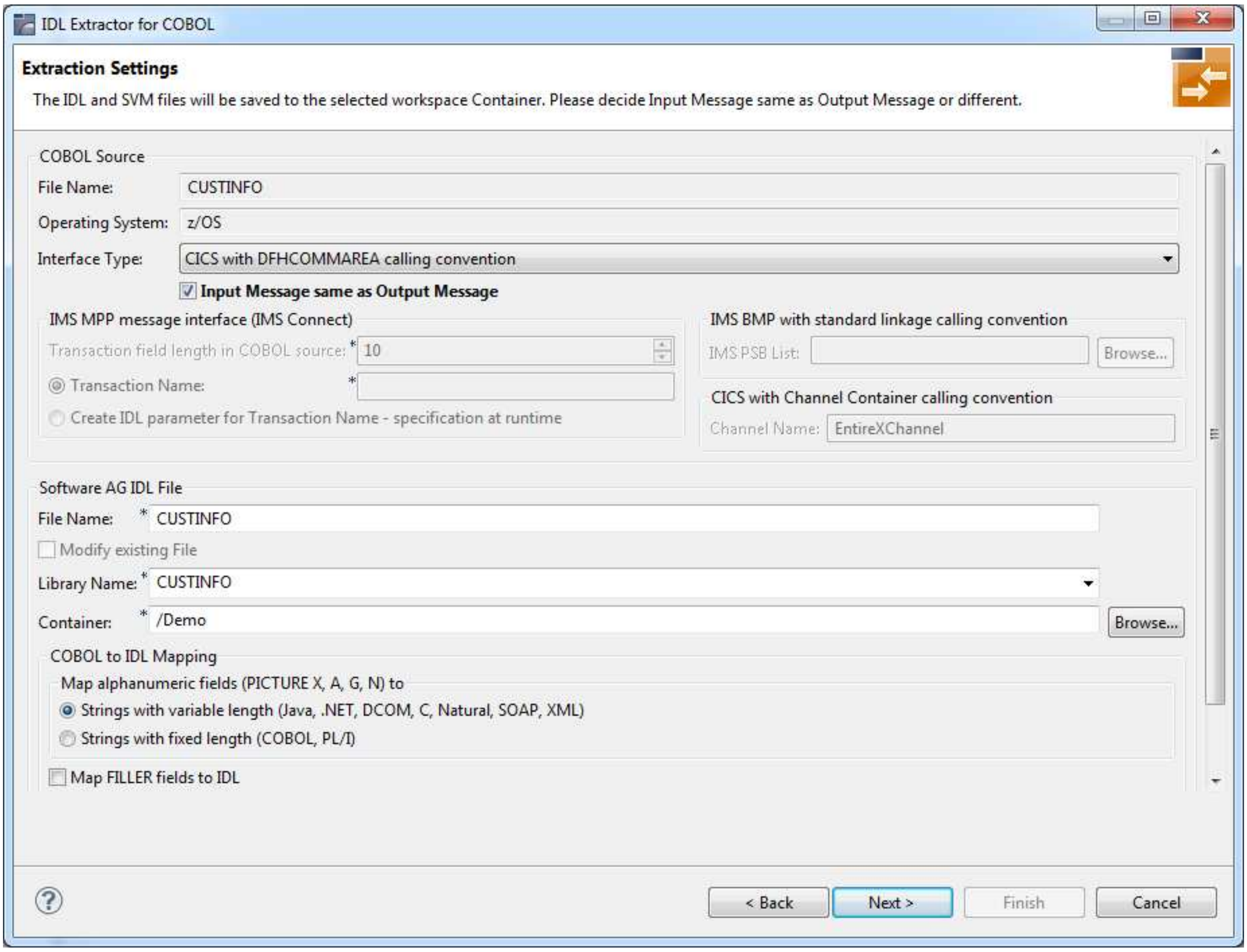
Total: 10

Select the element from which you want to extract. You can select only one COBOL source. The source can be a COBOL program or a COBOL copybook.

Choose **Next** and continue with *Step 4: Define the Extraction Settings and Start Extraction* below.

Step 4: Define the Extraction Settings and Start Extraction

In this page you specify the COBOL source and Software AG IDL target options used for IDL extraction.



Extraction Settings

The IDL and SVM files will be saved to the selected workspace Container. Please decide Input Message same as Output Message or different.

COBOL Source

File Name: CUSTINFO

Operating System: z/OS

Interface Type: CICS with DFHCOMMAREA calling convention

☑ Input Message same as Output Message

IMS MPP message interface (IMS Connect)

Transaction field length in COBOL source: * 10

● Transaction Name: *

○ Create IDL parameter for Transaction Name - specification at runtime

IMS BMP with standard linkage calling convention

IMS PSB List: Browse...

CICS with Channel Container calling convention

Channel Name: EntireXChannel

Software AG IDL File

File Name: * CUSTINFO

□ Modify existing File

Library Name: * CUSTINFO

Container: * /Demo Browse...

COBOL to IDL Mapping

Map alphanumeric fields (PICTURE X, A, G, N) to

● Strings with variable length (Java, .NET, DCOM, C, Natural, SOAP, XML)

○ Strings with fixed length (COBOL, PL/I)

□ Map FILLER fields to IDL

Operating System

The operating system is already defined in the extractor environment in the IDL Extractor for COBOL preferences, see *IDL Extractor for COBOL Preferences*.

Interface Type

The interface type must match the type of your COBOL server program. It is used by the RPC server and the EntireX Adapter at runtime to correctly call the COBOL server and must be a supported interface type of the RPC server used. See *Compatibility between COBOL Interface Types and RPC Server*.

Additional information may be required depending on the interface type:

- **CICS with DFHCOMMAREA Calling Convention**
  Specify **Input Message same as Output Message**. If the COBOL server program uses a different COBOL output data structure compared to its input data structure, that is, the input message layout is overlaid with another layout on output, you need to *uncheck* **Input Message same as Output Message**. See the following COBOL server examples:

  - ○ *Example 2: Redefines*
  - ○ *Example 3: Buffer Technique*
  - ○ *Example 4: COBOL SET ADDRESS Statements*

  If the COBOL server program uses the same COBOL data structure on input as well as on output, you need to *check* **Input Message same as Output Message**. See the following COBOL server examples:

  - ○ *Example 2: Redefines*
  - ○ *Example 3: Buffer Technique*
  - ○ *Example 4: COBOL SET ADDRESS Statements*

- **CICS with Channel Container Calling Convention**
  Optionally, specify a channel name. See *Extracting from a CICS Channel Container Program*.

- **CICS with DFHCOMMAREA Large Buffer Calling Convention**
  Specify **Input Message same as Output Message**. If the COBOL server program uses a different COBOL large output buffer data structure compared to its large input buffer data structure, you need to *uncheck* **Input Message same as Output Message**.

- **IMS MPP Message Interface (IMS Connect)**
  Specify how you want the transaction name to be determined. See *Extracting from an IMS MPP Message Interface Program*.

- **IMS BMP with Standard Linkage Calling Convention**
  You can optionally set the **IMS PSB List**. See *Extracting from an IMS BMP Standard Call Interface*.

- **Batch with Standard Linkage Convention**
  No further information is required.

- **MicroFocus with Standard Linkage Convention**
  No further information is required.

For an introduction to interface types, see *Supported COBOL Interface Types*.

Software AG IDL File

With the Software AG IDL file target options you specify the IDL file and IDL library names used:

- **File name** specifies the file name used by the operating system.

- **Modify existing file** is enabled only when the IDL file already exists. If enabled, check this option to continue the extraction.

- **Library name** defines the IDL library name used in the IDL file. The dialog box cannot be edited when you modify an existing IDL file. If there are multiple libraries, you can select one of these; if there is only one library, the box is disabled. When you extract the IDL the first time or you specify the name of an existing IDL file, the box can be edited (like a text widget). If you specified an existing IDL file, the currently existing library names are available in the box.

For the interface type "Micro Focus with standard linkage calling convention" and if the COBOL server is an operating system standard library (.so|.sl on UNIX or .dll on Windows) or a Micro Focus proprietary library (*.lbr), the IDL library name used must match the operating system file name. For Micro Focus proprietary formats, intermediate code (*.int) and generated code (*.gnt), any IDL library name can be used. See *Locating and Calling the Target Server* in the Micro Focus RPC Server documentation.

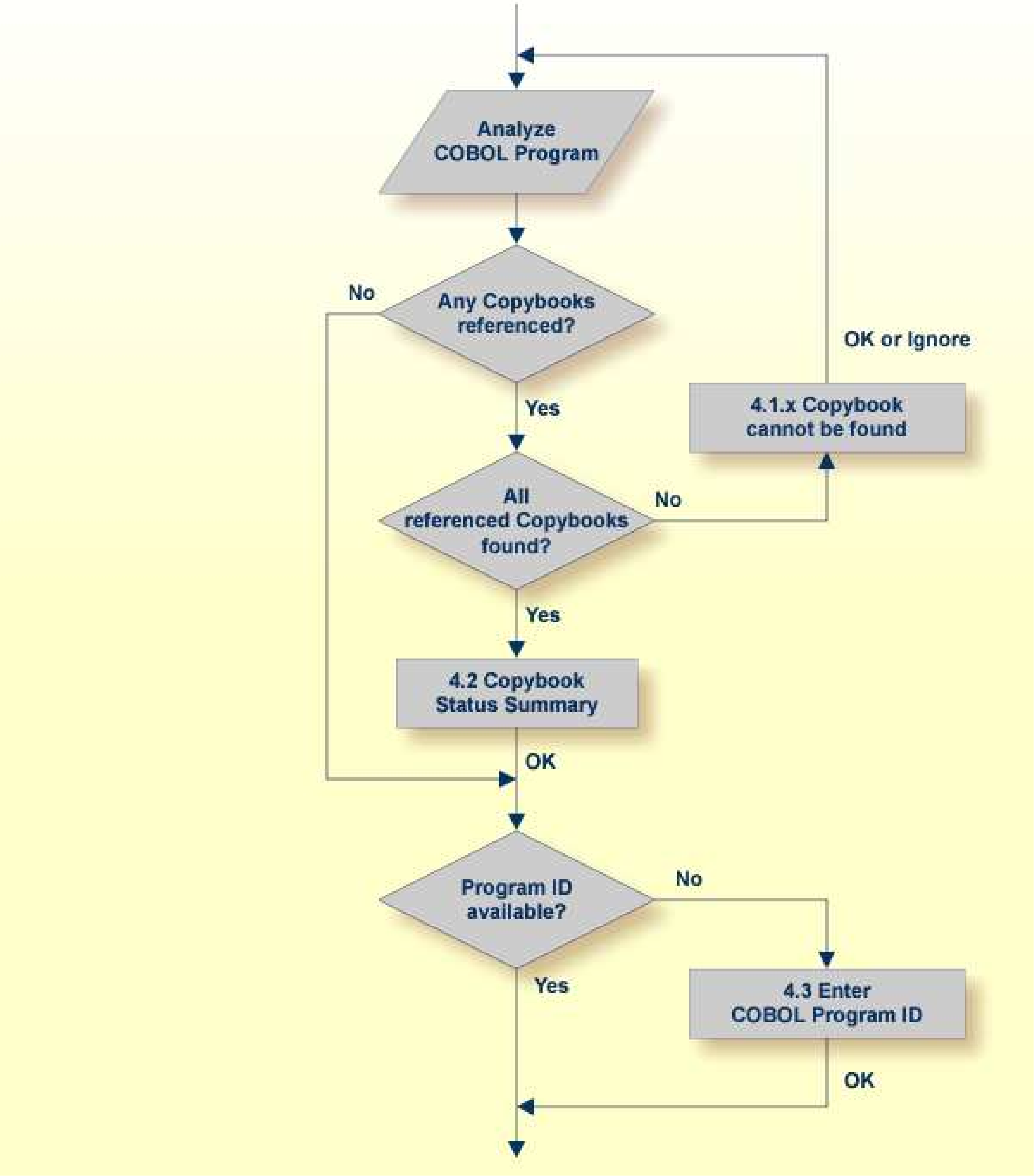
- **Container** specifies the eclipse container used for the IDL file

COBOL to IDL Mapping

With these target options you specify how COBOL data items are mapped to IDL:

- If the target RPC clients support variable length strings without any restriction, we recommend you map alphanumeric fields to "Strings with variable length". This is true for most modern target environments such as Java, .NET, DCOM, C, Natural, SOAP, XML.
- If the target RPC clients do not support variable length strings or support them with restrictions, we recommend you map alphanumeric fields to "Strings with fixed length"
- Check the box **Map FILLER fields to IDL** if COBOL `FILLER` pseudo-parameters are to be part of the RPC client interface. By default they are not mapped to IDL.

Choose **Next** and start the extraction. The wizard now analyzes the COBOL program. During this process the following situations are possible:



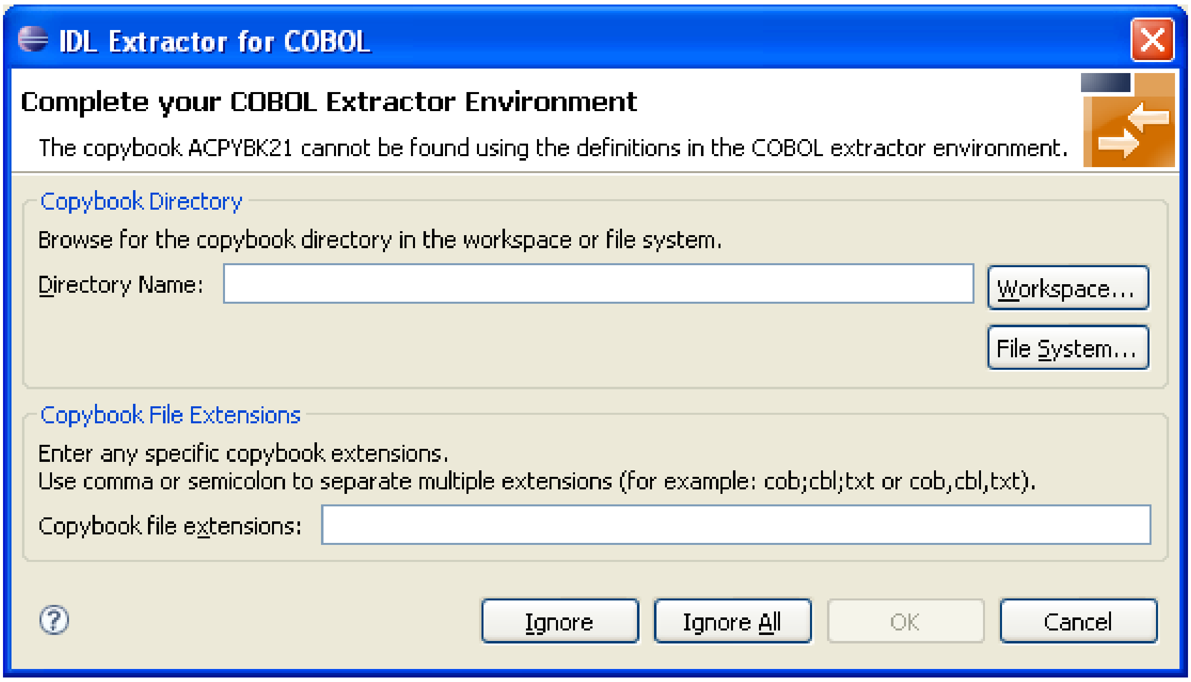
- Referenced copybooks cannot be found. In this case the wizard prompts you for every missing copybook. Continue with optional step *Step 4.1x: Copybook Cannot be Found* - Local Extraction | Remote Extraction (z/OS) | Remote Extraction (BS2000/OSD) in the IDL Extractor for COBOL documentation depending on your situation.

- If referenced copybooks are not available, you can choose **Ignore** or **Ignore All**, a copybook status summary page is displayed, see *Step 4.2: Copybook Status Summary (Optional)*.

- No COBOL program ID can be located if you extract, for example, from a copybook that contains COBOL data items only. In this case, the wizard prompts you to enter the COBOL program ID. Continue with *Step 4.3: Enter COBOL Program ID (Optional)*.
- There is no copybook reference in your COBOL source or all referenced copybooks are found. Also the COBOL program ID can be located. In this case continue with *Step 5: Select the COBOL Interface and Map to IDL Interface* under *Scenario I: Create New IDL and Server Mapping Files*.

Step 4.1a: Copybook Cannot be Found - Local Extraction

This dialog enables you to browse directories where missing copybooks might be found. If there are any specific copybook file extensions, you can define them here.



IDL Extractor for COBOL

Complete your COBOL Extractor Environment

The copybook ACPYBK21 cannot be found using the definitions in the COBOL extractor environment.

Copybook Directory

Browse for the copybook directory in the workspace or file system.

Directory Name:

Copybook File Extensions

Enter any specific copybook extensions.
Use comma or semicolon to separate multiple extensions (for example: cob;cbl;txt or cob,cbl,txt).

Copybook file extensions:

The copybook that cannot be found is given in the window, here its name is "ACPYBK21". In the extractor Preferences, the copybook directory that contains the copybook or the copybook file extension is not defined.

Continue with one of the following actions:

To ignore this copybook only

1. Choose **Ignore** and go back to *Step 4: Define the Extraction Settings and Start Extraction*.
2. Choose **Next** to start extraction again.

To ignore this and all further copybooks

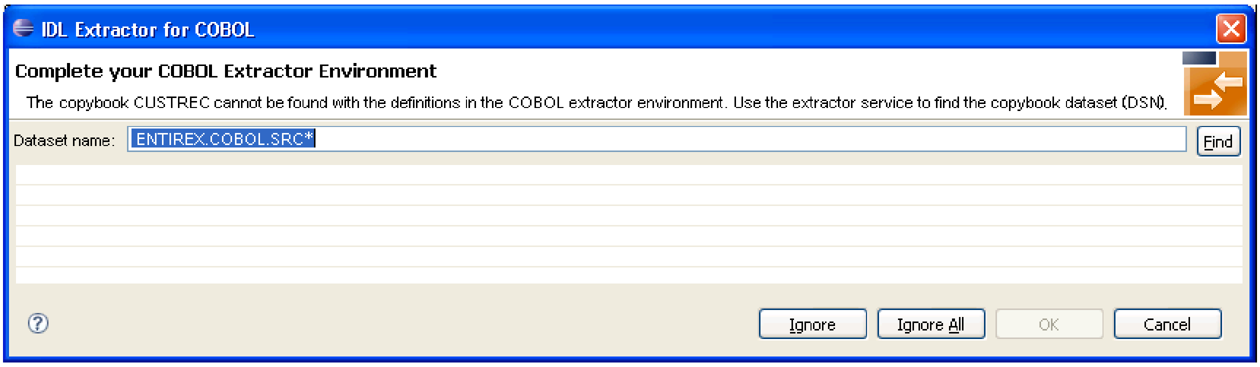
1. Choose **Ignore All** and go back to *Step 4: Define the Extraction Settings and Start Extraction*.
2. Choose **Next** to start extraction again.

To complete the extractor environment

1. Choose **Workspace** or **File System** to browse for the copybook directory.
2. Check the copybook file extensions. Both will be saved in the COBOL extractor preferences and reused in further extractions.
3. Choose **OK** and go back to *Step 4: Define the Extraction Settings and Start Extraction*.
4. Choose **Next** to start extraction again.

Step 4.1b: Copybook Cannot be Found - z/OS Remote Extraction

This dialog enables you to browse remote locations (partitioned or CA Librarian data sets) where missing copybooks might be found.



IDL Extractor for COBOL

Complete your COBOL Extractor Environment

The copybook CUSTREC cannot be found with the definitions in the COBOL extractor environment. Use the extractor service to find the copybook dataset (DSN).

Dataset name: ENTIREX.COBOL.SRC*

The copybook that cannot be found is given in the window; here its name is "CUSTREC". In the extractor preferences, the copybook data set that contains the copybook is not defined.

Continue with one of the following choices:

To ignore this copybook only

1. Choose **Ignore** and go back to *Step 4: Define the Extraction Settings and Start Extraction*.
2. Choose **Next** to start extraction again.

To ignore this and all further copybooks

1. Choose **Ignore All** and go back to *Step 4: Define the Extraction Settings and Start Extraction*.
2. Choose **Next** to start extraction again.

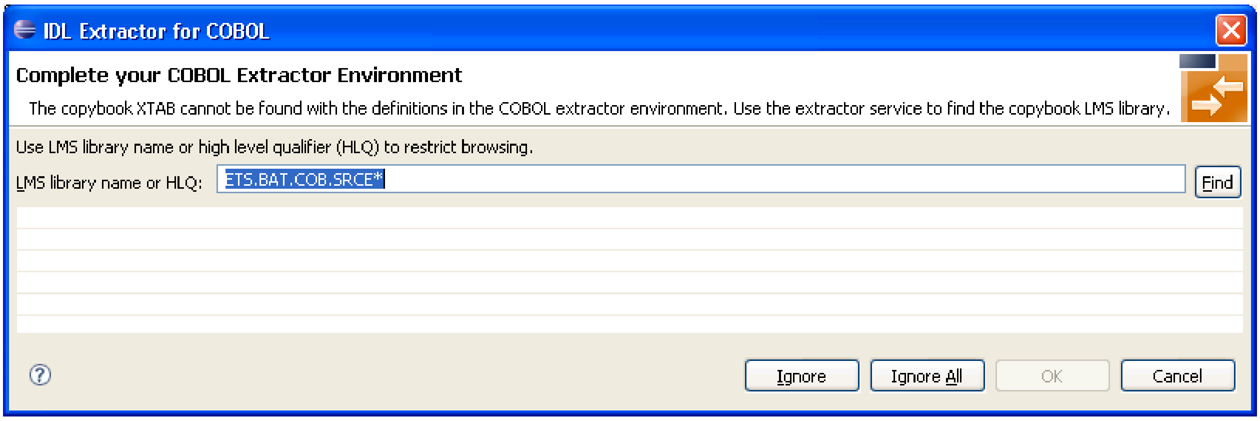
To complete the extractor environment

1. Choose **Find** to browse for the copybook data set. It will be saved in the COBOL extractor preferences and reused in further extractions.
2. Choose **OK** and go back to *Step 4: Define the Extraction Settings and Start Extraction*.

3. Choose **Next** to start extraction again.

Step 4.1c: Copybook Cannot be Found - BS2000/OSD Remote Extraction

This dialog enables you to browse remote locations (LMS libraries) where missing copybooks might be found.



IDL Extractor for COBOL

Complete your COBOL Extractor Environment

The copybook XTAB cannot be found with the definitions in the COBOL extractor environment. Use the extractor service to find the copybook LMS library.

Use LMS library name or high level qualifier (HLQ) to restrict browsing.

LMS library name or HLQ: ETS.BAT.COB.SRCE*

The copybook that cannot be found is given in the window; here its name is "XTAB". In the extractor preferences, the copybook LMS library that contains the copybook is not defined.

Continue with one of the following choices:

To ignore this copybook only

1. Choose **Ignore** and go back to *Step 4: Define the Extraction Settings and Start Extraction*.
2. Choose **Next** to start extraction again.

To ignore this and all further copybooks

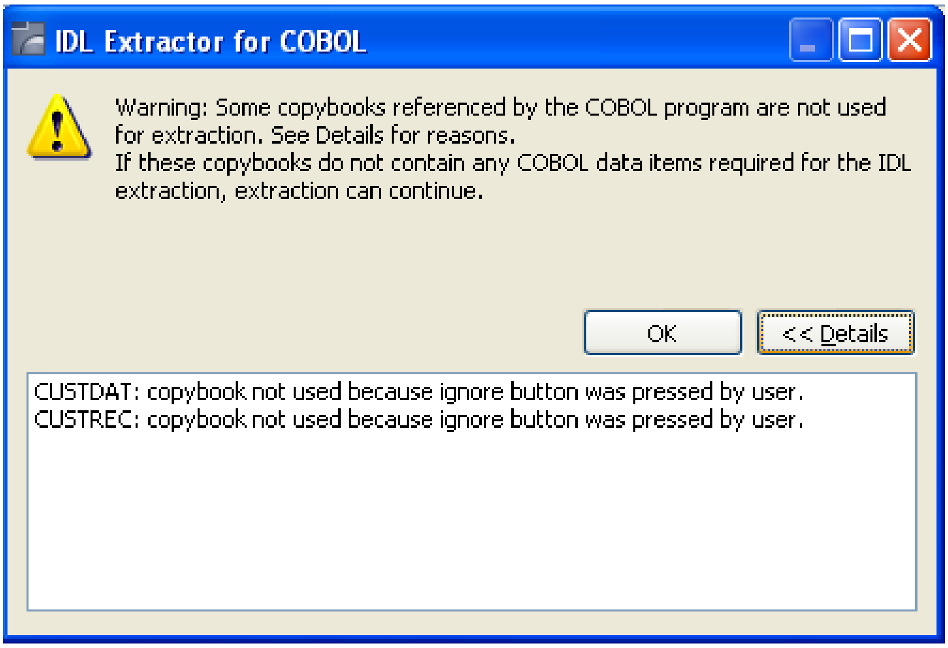
1. Choose **Ignore All** and go back to *Step 4: Define the Extraction Settings and Start Extraction*.
2. Choose **Next** to start extraction again.

To complete the extractor environment

1. Choose **Find** to browse for the copybook LMS library. It will be saved in the COBOL extractor preferences and reused in further extractions.
2. Choose **OK** and go back to *Step 4: Define the Extraction Settings and Start Extraction*.
3. Choose **Next** to start extraction again.

Step 4.2: Copybook Status Summary (Optional)

This summary page lists all COBOL copybooks which were not available during extraction.



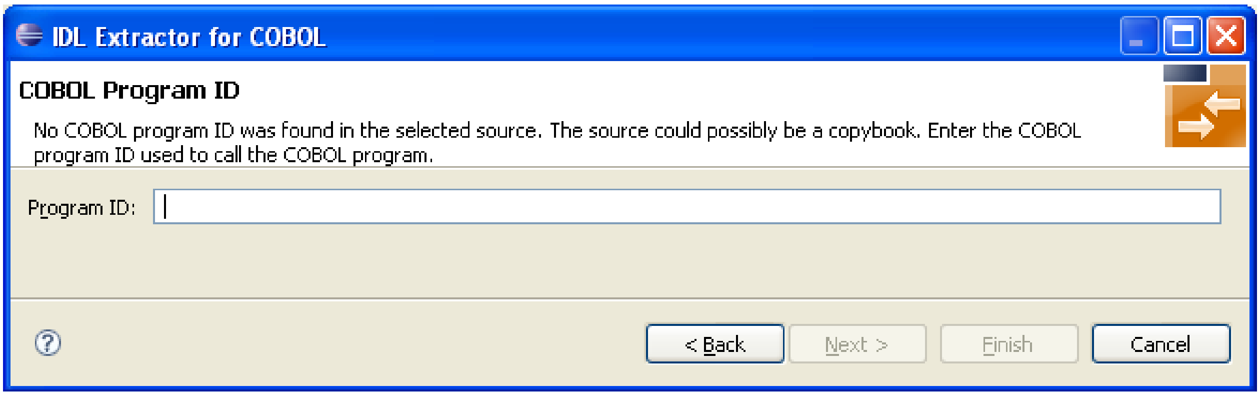
Warning: Some copybooks referenced by the COBOL program are not used for extraction. See Details for reasons.
If these copybooks do not contain any COBOL data items required for the IDL extraction, extraction can continue.

CUSTDAT: copybook not used because ignore button was pressed by user.
CUSTREC: copybook not used because ignore button was pressed by user.

- If any relevant COBOL data item describing the server interface is contained in one of the listed copybooks, you cannot continue. Terminate the extraction and try to get the missing copybooks.
- If no relevant COBOL data item describing the server interface is contained in the copybooks, you can continue. Choose **OK**.

Step 4.3: Enter COBOL Program ID (Optional)

This page is shown whenever the program ID of the COBOL source is missing. Entering a COBOL program name is compulsory.



No COBOL program ID was found in the selected source. The source could possibly be a copybook. Enter the COBOL program ID used to call the COBOL program.

Program ID:

No COBOL program ID can be located if you extract, for example, from a copybook that contains COBOL data items only. The COBOL program ID

- is the COBOL program name
- is often the name of the executable or load module

- can be found in the `IDENTIFICATION DIVISION` (abbreviated to`"ID"`). Example

```
ID DIVISION.
PROGRAM-ID.   CUSTINFO.
AUTHOR.       BMF.
DATE-WRITTEN. 26-11-1996
```

To complete the extraction

1. Enter the COBOL program ID.
2. Choose **OK** to continue with *Step 5: Select the COBOL Interface and Map to IDL Interface*.

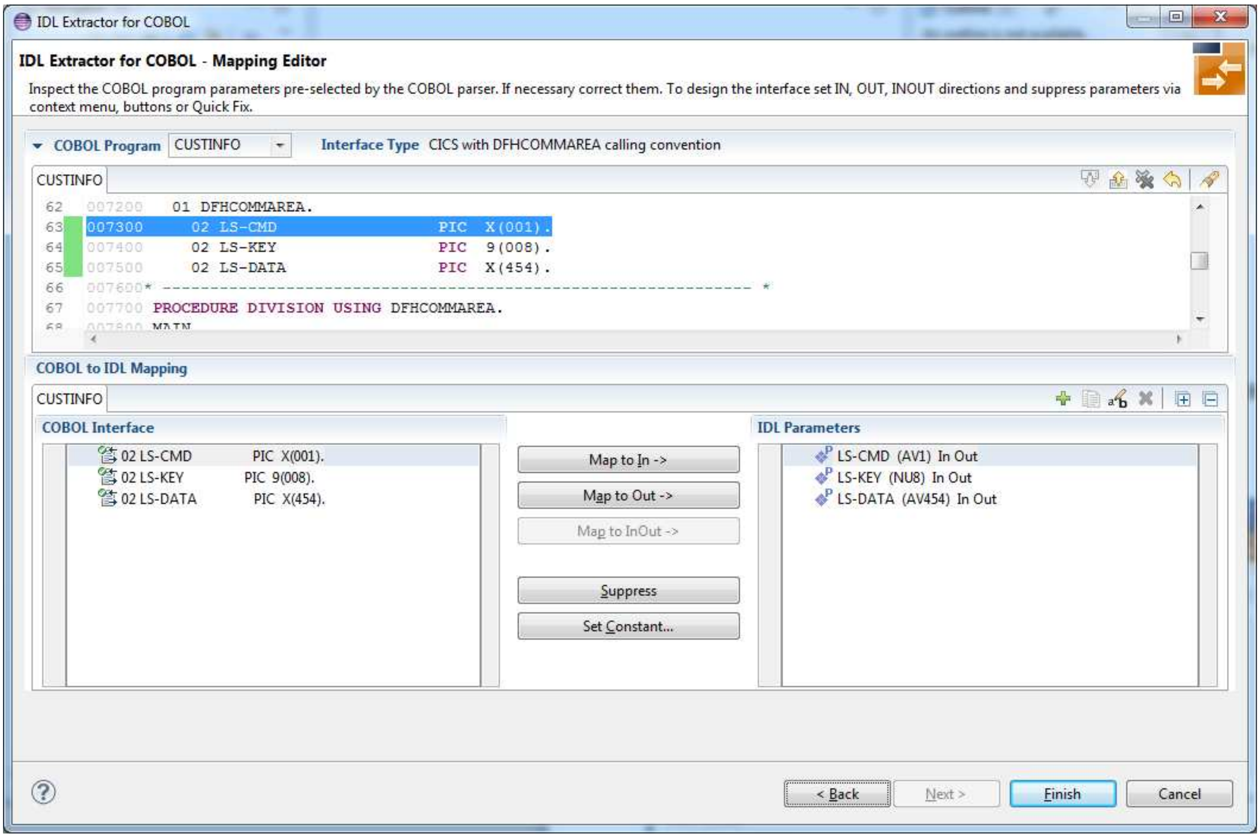
Step 5: Select the COBOL Interface and Map to IDL Interface

In general, mapping the COBOL data items to IDL with the COBOL Mapping Editor is a two-step process:

1. First select the COBOL data items describing the COBOL interface from the COBOL source view. In this example the COBOL interface is preselected as defined in the `PROCEDURE DIVISION USING` clause.

2. Then map the COBOL interface to the IDL interface.

See the guidelines on IDL extraction below for further information.



IDL Extractor for COBOL - Mapping Editor

Inspect the COBOL program parameters pre-selected by the COBOL parser. If necessary correct them. To design the interface set IN, OUT, INOUT directions and suppress parameters via context menu, buttons or Quick Fix.

COBOL Program: CUSTINFO   Interface Type: CICS with DFHCOMMAREA calling convention

CUSTINFO

```
007200    01 DFHCOMMAREA.
007300      02 LS-CMD                  PIC  X(001).
007400      02 LS-KEY                  PIC  9(008).
007500      02 LS-DATA                 PIC  X(454).
007600* -----------------------------------------------------------------*
007700  PROCEDURE DIVISION USING DFHCOMMAREA.
007800  MAIN
```

COBOL to IDL Mapping

CUSTINFO

COBOL Interface	IDL Parameters
02 LS-CMD PIC X(001).	LS-CMD (AV1) In Out
02 LS-KEY PIC 9(008).	LS-KEY (NU8) In Out
02 LS-DATA PIC X(454).	LS-DATA (AV454) In Out

Map to In ->
Map to Out ->
Map to InOut ->
Suppress
Set Constant...
< Back
Next >
Finish
Cancel

The following table provides guidelines on IDL extraction per interface type. For the CICS interface types DFHCOMMAREA and DFHCOMMAREA Large Buffer, the guidelines distinguish further between COBOL server programs overlaying the input data structure with a different output data structure and COBOL server programs using same structures on input and output. You already selected this in the checkbox **Input Message same as Output Message** in *Step 4: Define the Extraction Settings and Start Extraction*.

Environment	Interface Type	CICS Message on Input and Output	Guidelines
CICS	DFHCOMMAREA (3)	same (1,4)	More info
		different (2,5)	More info
	Large Buffer	same (1)	More info
		different (2)	More info
	Channel Container		More info
Batch	Standard Linkage		More info
IMS	BMP with Standard Linkage		More info
	MPP Message Interface (IMS Connect)		More info
Micro Focus	Standard Linkage		More info

Notes:

1. Checkbox **Input Message same as Output Message** in *Step 4: Define the Extraction Settings and Start Extraction* is checked. The COBOL data structure of the CICS input message is the same as the structure of the CICS output message.
2. Checkbox **Input Message same as Output Message** in *Step 4: Define the Extraction Settings and Start Extraction* is cleared. The COBOL data structure of the CICS input message is different to the structure of the CICS output message (that is, the output overlays the input).
3. Your `DFHCOMMAREA` COBOL server must be DPL-enabled to be directly supported by EntireX. The distributed program (DPL) link function enables a CICS client program to call another CICS program (the server program) in a remote CICS region. Technically, a COBOL server is DPL-enabled if

   - CICS is able to call the COBOL server remotely
   - the `DFHCOMMAREA` layout does *not* contain pointers

   If your program is not DPL-enabled, see *What to do with other Interface Types?* in *Introduction to the IDL Extractor for COBOL*
4. See the following COBOL server examples for CICS input message *the same as* CICS output message:

   - *Example 2: Redefines*
   - *Example 3: Buffer Technique*
   - *Example 4: COBOL SET ADDRESS Statements*

5. See the following COBOL server examples for CICS input message *different to* CICS output message:

   - *Example 2: Redefines*
   - *Example 3: Buffer Technique*
   - *Example 4: COBOL SET ADDRESS Statements*

The outcome of the Mapping Editor is the IDL file and a server mapping file (optional). There are server-side mapping files (EntireX Workbench files with extension .svm) and client-side mapping files (extension .cvm). See *Server Mapping Files in the EntireX Workbench* and *How to Set the Type of Server Mapping Files*.

Step 6: Finishing the Mapping Editor

When you choose **Save** in the Mapping Editor, the IDL file is generated. If required, a server mapping file is generated,too. See *When is a Server Mapping File Required?* in the EntireX Workbench documentation The server mapping file is either of type client-side (extension .cvm) or server-side (extension .svm). See *How to Set the Type of Server Mapping Files*. Both files are written with the "File Name" entered for the IDL file in *Step 4: Define the Extraction Settings and Start Extraction*.

- If you are using *client-side* mapping files, continue with *Step 7: Validate the Extraction and Test the IDL File*.

- If you are using *server-side* mapping files, the dialog below is displayed whenever the COBOL Mapping Editor is saved. There are two options to choose from:

  - **Save IDL and server mapping files**
    will save the generated files into the workspace and quit the COBOL Mapping Editor

    The generated server-side mapping file need to be synchronized with the server-side mapping container of the target RPC server, except for IMS Connect and CICS ECI connections with the EntireX Adapter, where they are wrapped into the Integration Server connection - the same as client-side mapping files, see *Integration Server Wrapper*.

    - Check the option **Synchronize with server-side mapping container now** for the following RPC servers:

      - z/OS (CICS, Batch, IMS) | Micro Focus | BS2000/OSD | z/VSE (CICS, Batch)

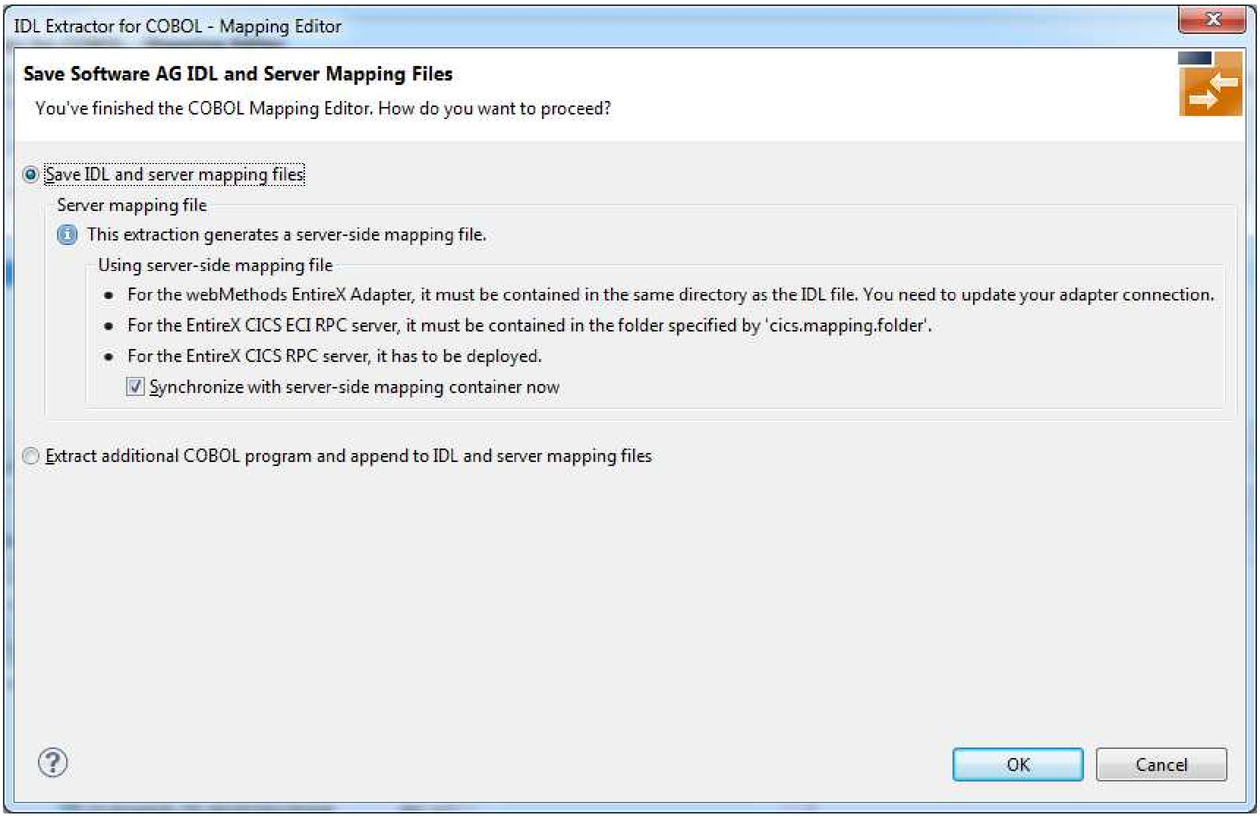
    - Uncheck the option **Synchronize with server-side mapping container now** for

      - EntireX Adapter and IMS Connect and CICS ECI connections

      - the following RPC servers: CICS ECI | IMS Connect

      - later synchronization of other RPC servers

  - **Extract additional COBOL program and append to the IDL and server mapping files**
    will save the generated files into the workspace, quit the Mapping Editor and start the IDL Extractor for COBOL again. The additionally extracted COBOL source will then be added to the previously generated IDL and server mapping files.



IDL Extractor for COBOL - Mapping Editor

Save Software AG IDL and Server Mapping Files

You've finished the COBOL Mapping Editor. How do you want to proceed?

● Save IDL and server mapping files

Server mapping file

This extraction generates a server-side mapping file.

Using server-side mapping file

- For the webMethods EntireX Adapter, it must be contained in the same directory as the IDL file. You need to update your adapter connection.
- For the EntireX CICS ECI RPC server, it must be contained in the folder specified by 'cics.mapping.folder'.
- For the EntireX CICS RPC server, it has to be deployed.

☑ Synchronize with server-side mapping container now

○ Extract additional COBOL program and append to IDL and server mapping files

To save the generated files into the workspace, quit the Mapping Editor and deploy the server-side mapping file

1. Select **Save IDL and server mapping files**.
2. Check the option **Synchronize with server-side mapping container now** and choose **OK**. This calls the Deployment Wizard. See *Server Mapping Deployment Wizard* in the EntireX Workbench documentation.
   - If you are using the Server Mapping Deployment Wizard for first time with no predefined deployment environment preferences, continue with *Step 2a: Create a New Deployment Environment* in the Server Mapping Deployment Wizard documentation.
   - If deployment environments are already defined, you may also continue with *Step 3: Select and Existing Deployment Environment and Deploy*.
3. Continue with *Step 7: Validate the Extraction and Test the IDL File*.

To save the generated files into the workspace and quit the Mapping Editor without deploying the server-side mapping file

1. Select **Save IDL and server mapping files**.
2. Clear the option **Synchronize with server-side mapping container now** and choose **OK**.
   - Synchronize the server-side mapping container of the target RPC server later. See *Deploying Server-side Mapping Files to the RPC Server* in the RPC server documentation for z/OS (CICS, Batch, IMS) | Micro Focus | CICS ECI | IMS Connect | BS2000/OSD | z/VSE (CICS | Batch).

- For the webMethods EntireX Adapter and IMS Connect or CICS ECI connections, update your Adapter connection. See *Step 3: Select the Connection Type* in the Integration Server Wrapper documentation.

3. Continue with *Step 7: Validate the Extraction and Test the IDL File*.

To save the generated files into the workspace, quit the Mapping Editor and start the IDL Extractor for COBOL again

- Select **Extract additional COBOL program and append to the IDL and server mapping files** and choose **OK**. Continue with *Step 2: Select a COBOL Extractor Environment or Create a New One*.

Warning:
Do not edit the IDL file manually or with the IDL Editor, except for changing parameter names. Otherwise, consistency between the IDL file and the server mapping file will be lost, resulting in unexpected behavior. For this purpose use the COBOL Mapping Editor instead and choose *Scenario III: Modify Existing IDL and Server Mapping Files*.

Warning:
A server mapping file extracted this way must not be re-created by the COBOL Wrapper. Server mapping specifications of such a file would not be powerful enough to adequately describe your COBOL server program extracted here.

Step 7: Validate the Extraction and Test the IDL File

The IDL file is used to build RPC clients using an EntireX Workbench wrapper of your choice. See *EntireX Wrappers* in the EntireX Workbench documentation.

If you are using client-side mapping files:

- You need to rebuild all RPC clients communicating with this RPC server program and re-generate the client interface objects.
- For connections with the webMethods EntireX Adapter you need to update your Adapter connection, see *Step 3: Select the Connection Type* in the Integration Server Wrapper documentation.

For a quick validation of your extraction, you can

- use the IDL Tester to validate the extraction, see *EntireX IDL Tester* in the EntireX Workbench documentation.
- generate an XML mapping file (XMM) and use the XML Tester for verification. See *EntireX XML Tester* in the XML/SOAP Wrapper documentation.