

Displaying Cross-Reference Data

Using the XRef GUI Client plug-in, you can navigate through cross-reference data in a development server file. These cross-reference data are created when you catalog or stow an object. For detailed information, see Natural XRef GUI Client in the Remote Development documentation of Natural for Windows.

Generation of cross-reference data was previously only available with Predict. With the Natural development server and the Natural XRef GUI Client, it is now also available without Predict.

The following topics are covered below:

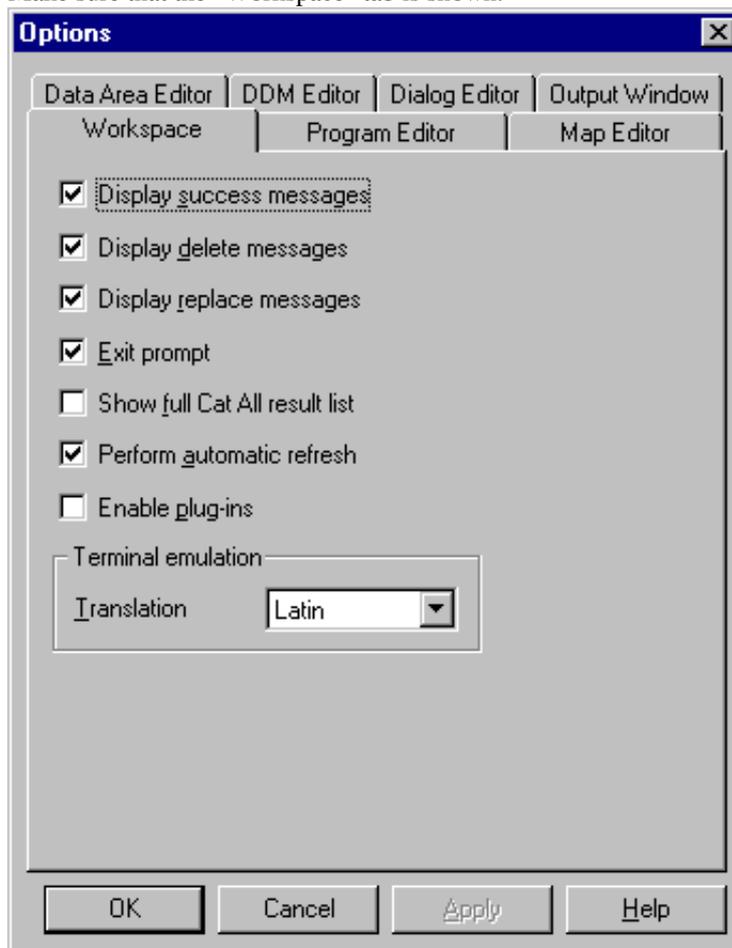
- Enabling the Usage of Plug-Ins
 - Activating the XRef GUI Client Plug-In
 - Activating the Generation of Cross-Reference Data
 - Generating Cross-Reference Data
 - Displaying Active Cross-References
 - Applying a Change to a Copycode
 - Displaying Passive Cross-References
 - Cataloging the Objects that Include the Changed Copycode
-

Enabling the Usage of Plug-Ins

So that you can use the XRef GUI Client plug-in, you must first enable the usage of plug-ins. Once enabled, the Plug-in Manager is automatically active each time you start Natural.

▶ To enable the usage of plug-ins

1. From the **Tools** menu, choose **Options**.
The "Options" dialog box appears.
2. Make sure that the "Workspace" tab is shown.



Note:

If you have previously disabled success and delete messages, the corresponding check boxes are not selected.

3. Make sure that the "Enable plug-ins" check box is selected.
4. Choose the **OK** button.
The **Plug-in Manager** command and the corresponding toolbar button are now available (see below). When the usage of plug-ins is not enabled, this command and toolbar button are not shown.

Activating the XRef GUI Client Plug-In

The XRef GUI Client plug-in is not active by default.

When the Plug-in Manager has been enabled, you can activate the XRef GUI Client plug-in. Two types of activation mode are available:

- **Automatic**
The XRef GUI Client plug-in is automatically activated each time Natural is started.
- **Manual**
The XRef GUI Client plug-in must be activated manually on demand (default).

▶ **To activate the XRef GUI Client plug-in**

1. From the **Tools** menu, choose **Configuration Tools > Plug-in Manager**.
Or click the following toolbar button:



The "Plug-in Manager" window appears.

Plug-in Manager				
Name	Status	Mode	Type	
Natural Studio Sample Plug-in	Not active	Manual	Tree	
Natural Studio Cross-reference Client Plug-in	Not active	Manual	Tree	
Natural Studio Plug-in Manager Plug-in	Active	Automatic	Tree	

2. Select the "Natural Studio Cross-reference Client Plug-in" entry.
3. Click the right mouse button and from the resulting context menu, choose **Activation mode > Automatic**.
This does not automatically activate the XRef GUI Client for the current session. To activate it, you can either restart Natural or proceed as described with the next step.
4. Click the right mouse button while "Natural Studio Cross-reference Client Plug-in" is still selected and from the resulting context menu, choose **Activate**.

When activated, the XRef toolbar is automatically provided:



Note:

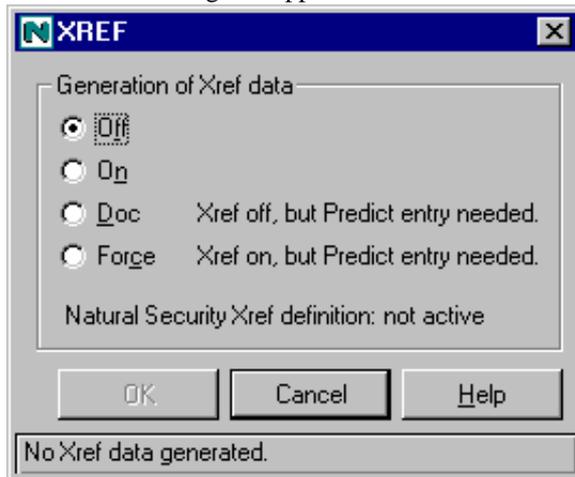
If you want to deactivate the XRef toolbar, choose **Customize** from the **Tools** menu. See *Displaying Additional Toolbars* for further information.

Activating the Generation of Cross-Reference Data

Whether the generation of cross-reference data is activated by default depends on the settings of the Natural parameter module. You will now make sure that cross-reference data will be generated.

▶ To activate the generation of cross-reference data

1. From the **Tools** menu, choose **Configuration Tools > XRef Generation**.
The "XREF" dialog box appears.



2. Make sure that the "On" option button is selected.
3. Choose the **OK** button.
A message appears indicating that Xref mode is now set to On.
4. Choose the **OK** button.
Cross-reference data will now be generated the next time you catalog an object.

Generating Cross-Reference Data

Cross-reference data are generated when cataloging objects.

For this tutorial, you will first copy all objects from the system library SYSSPODX to a new user library named SPODXREF. To generate cross-reference data, you will then catalog the objects in the new user library.

To copy the demo data to a new user library

1. Create a new user library named SPODXREF (see [Creating User Libraries](#)).
Make sure to create this library in an environment in which a Natural development server has been installed.
2. Copy all objects from the system library SYSSPODX to the new library SPODXREF (see [Copying and Moving Objects](#)).

To generate cross-reference data

- Catalog all objects in the new library SPODXREF (see [Cataloging Objects](#)).
Cross-reference data are now available for all objects in this library.

Displaying Active Cross-References

You will now check which objects are used by the program P-TMAIN1 in your new library SPODXREF.

▶ **To display the active cross-references for the program P-TMAIN1**

1. Select the program P-TMAIN1 in the library SPODXREF.
2. From the **Tools** menu, choose **Development Tools > XRef GUI Client > Selected Objects > Active Cross References**.

Or click the following toolbar button:

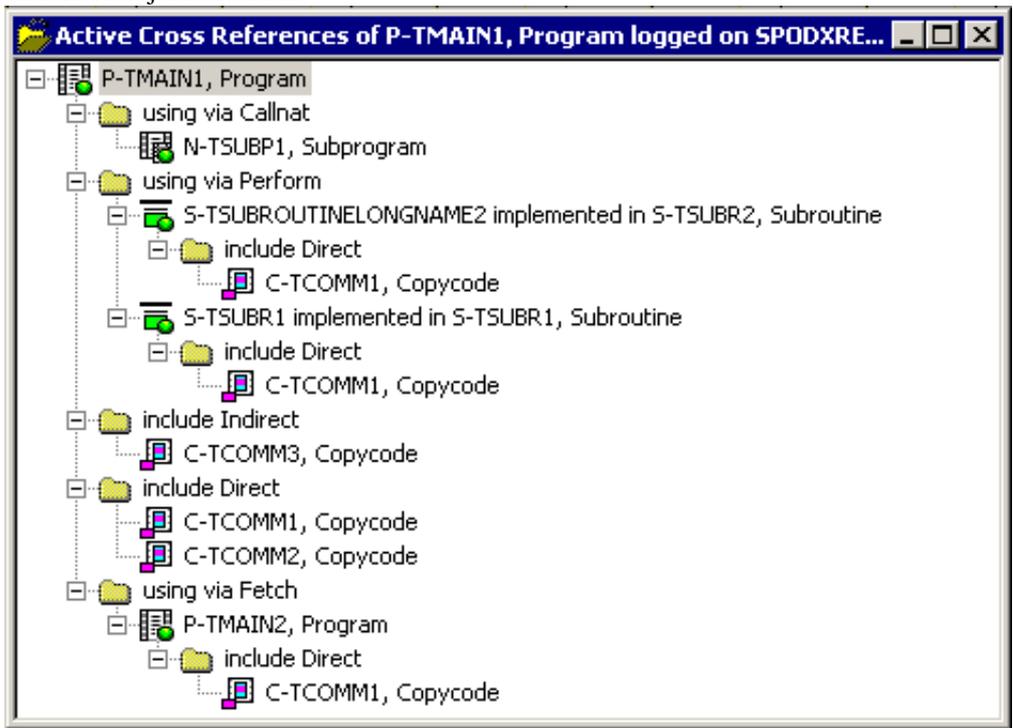


Tip:

Click the program with the right mouse button. You can then choose **Active Cross References** from the resulting context menu.

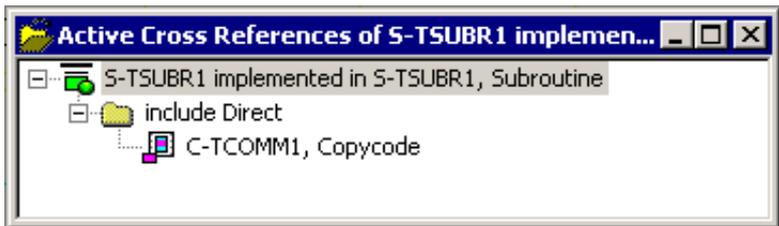
A tree view window appears showing the active cross-references for the selected program.

3. Expand the nodes under P-TMAIN1 (by clicking the plus signs) to display the logical structure in which the associated objects are used.



Note:

Expanding the node, for example, for the subroutine S-TSUBR1 in the above example displays the same data as selecting this subroutine in the library workspace (for example, in logical view) and executing the command **Active Cross References**:

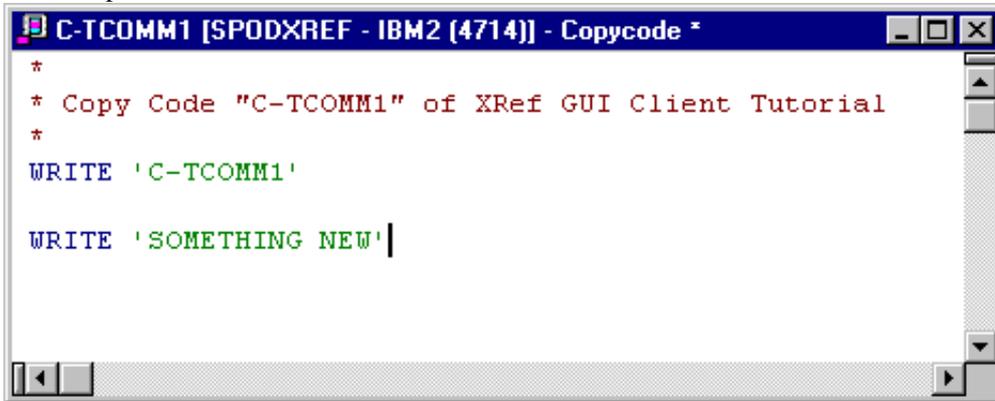


Applying a Change to a Copycode

You will now apply a small change to the copycode C-TCOMM1. You will later check by which objects this changed copycode is used so that you can catalog these objects once more.

▶ To apply a change to a copycode

1. Click C-TCOMM1 with the right mouse button and from the resulting context menu, choose **Open**.
Or double-click C-TCOMM1.
This can be done either in the library workspace or in the tree view window showing the active cross-references. In the latter case, you can open the copycode by using the **Open** command with any node representing C-TCOMM1 (under the nodes "using via Fetch", "using via Perform" or "include Direct").
The copycode is now shown in an editor window.
2. Add a new statement to the copycode.
For example, `WRITE 'SOMETHING NEW'`.



```
*  
* Copy Code "C-TCOMM1" of XRef GUI Client Tutorial  
*  
WRITE 'C-TCOMM1'  
  
WRITE 'SOMETHING NEW'|
```

3. From the **Object** menu, choose **Save**.
Or press CTRL+S.
Or click the following toolbar button:

4. Click the standard close button at the top right of the editor window to close this window.

Displaying Passive Cross-References

You will now check by which objects the changed copycode is used.

▶ To display the passive cross-references for the copycode C-TCOMM1

1. Select the copycode C-TCOMM1 in the tree view window showing the active cross-references.
2. From the **Tools** menu, choose **Development Tools > XRef GUI Client > Selected Objects > Passive Cross References**.

Or click the following toolbar button:

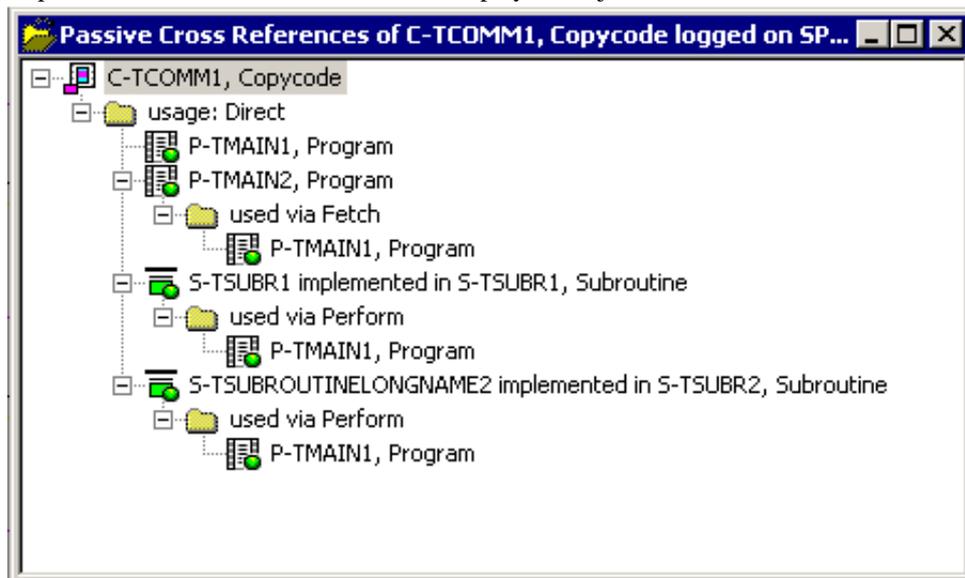


Tip:

Click the copycode with the right mouse button. You can then choose **Passive Cross References** from the resulting context menu.

A tree view window appears showing the passive cross-references for the selected copycode.

3. Expand the nodes under C-TCOMM1 to display the objects that include C-TCOMM1.



Cataloging the Objects that Include the Changed Copycode

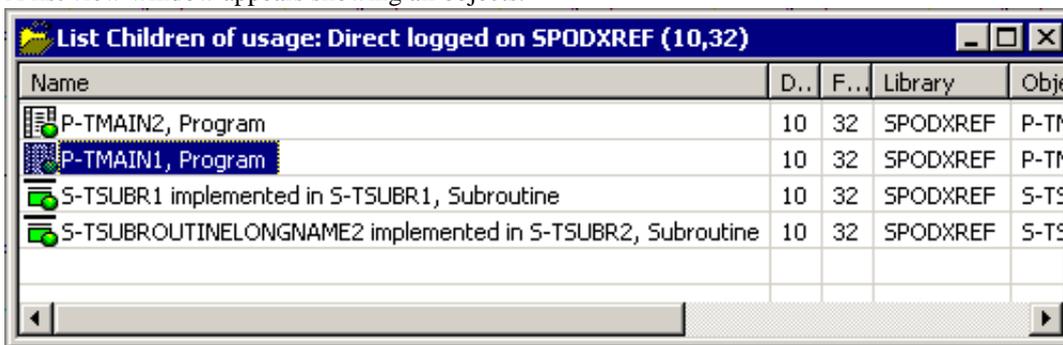
You will now catalog the objects which include the changed copycode.

When you proceed as described below, you can catalog a number of objects at the same time. The tree view window showing the passive cross-references (see above) only allows you to select one object at a time.

▶ **To catalog the objects that include C-TCOMM1**

1. In the tree view window showing the passive cross-references, click the node name "usage: Direct" with the right mouse button.
2. From the resulting context menu, choose **List Children**.

A list view window appears showing all objects.



3. Press CTRL+A to select all objects in the list.
4. Click the right mouse button and from the resulting context menu, choose **Catalog**.

Or click the following toolbar button:



You have now successfully completed this tutorial.