🎵 software ^AG

Natural

Object Description

Version 9.1.1 for Windows

October 2019

ADABAS & NATURAL

Table of Contents

Preface

This documentation is organized under the following headings:

What's New?	New features and enhancements.
Before You Start	How to activate this plug-in and how to connect to the development server.
Introduction	What is Object Description? Restrictions and benefits.
Elements of Object Description	Menu commands, context menus and toolbar buttonsContext menus and commands that are available in the Natural Studio window when this plug-in has been activated.
Invoking an Overview of All Documentation Objects	How to display the documentation objects in a tree view or list view window. How to filter or find the documentation objects, and how to display the properties for the nodes and objects.
Managing Natural Objects	How to create documentation objects by redocumenting Natural objects or by opening the description for a Natural object or library. How to find out whether a Natural object or library has already been documented by displaying its description.
Managing Documentation Objects	Information on the object type-specific windows. Information on the locking mechanism. How to view, modify, rename or purge documentation objects, and how to print/save reports for documentation objects.
Managing Associations and Links	How to select a navigation model, display the links for an association, link/unlink objects, modify/display the attributes of a link, and print/save a report for the attributes of a link.
Managing External Objects	How to generate external objects from documentation objects, compare documentation and implementation, administer external objects (refresh, disconnect and purge), and how to print/save reports for external objects.

📄 **Notes:**

1. Reference documentation is provided separately. See *Predefined Object Types in Predict*.

2. Certain features concerning external objects (generation, comparison and administration) are documented in *External Objects in Predict*.

1   About this Documentation

Document Conventions

Convention	Description
Bold	Identifies elements on a screen.
`Monospace font`	Identifies service names and locations in the format *folder.subfolder.service*, APIs, Java classes, methods, properties.
Italic	Identifies: Variables for which you must supply values specific to your own situation or environment. New terms the first time they occur in the text. References to other documentation sources.
`Monospace font`	Identifies: Text you must type in. Messages displayed by the system. Program code.
{ }	Indicates a set of choices from which you must choose one. Type only the information inside the curly braces. Do not type the { } symbols.
|	Separates two mutually exclusive choices in a syntax line. Type one of these choices. Do not type the | symbol.
[ ]	Indicates one or more options. Type only the information inside the square brackets. Do not type the [ ] symbols.
...	Indicates that you can type multiple options of the same type. Type only the information. Do not type the ellipsis (...).

Online Information and Support

Software AG Documentation Website

You can find documentation on the Software AG Documentation website at **http://documenta-tion.softwareag.com**. The site requires credentials for Software AG's Product Support site Empower. If you do not have Empower credentials, you must use the TECHcommunity website.

Software AG Empower Product Support Website

If you do not yet have an account for Empower, send an email to empower@softwareag.com with your name, company, and company email address and request an account.

Once you have an account, you can open Support Incidents online via the eService section of Empower at **https://empower.softwareag.com/**.

You can find product information on the Software AG Empower Product Support website at **https://empower.softwareag.com**.

To submit feature/enhancement requests, get information about product availability, and download products, go to **Products**.

To get information about fixes and to read early warnings, technical papers, and knowledge base articles, go to the **Knowledge Center**.

If you have any questions, you can find a local or toll-free number for your country in our Global Support Contact Directory at **https://empower.softwareag.com/public_directory.asp** and give us a call.

Software AG TECHcommunity

You can find documentation and other technical information on the Software AG TECHcommunity website at **http://techcommunity.softwareag.com**. You can:

- Access product documentation, if you have TECHcommunity credentials. If you do not, you will need to register and specify "Documentation" as an area of interest.

- Access articles, code samples, demos, and tutorials.

- Use the online discussion forums, moderated by Software AG professionals, to ask questions, discuss best practices, and learn how other customers are using Software AG technology.

- Link to external websites that discuss open standards and web technology.

Data Protection

Software AG products provide functionality with respect to processing of personal data according to the EU General Data Protection Regulation (GDPR). Where applicable, appropriate steps are documented in the respective administration documentation.

2   **What's New?**

Prerequisites

See *Prerequisites for Natural Single Point of Development* at *http://documentation.softwareag.com/natural/spod_prereq/prereq.htm* which lists the minimum requirements for this plug-in.

Object Description

3   Before You Start

This plug-in is automatically installed when you install the Natural development environment for Windows (see the Natural for Windows installation documentation for further information). Before you can use this plug-in, however, you have to activate it using the Plug-in Manager.

This chapter covers the following topics:

Enabling the Use of Plug-ins

When the use of plug-ins has already been enabled in Natural Studio, the command **Plug-in Manager** is available in the menu **Tools > Configuration Tools**. In this case, you can skip this section.

If the command **Plug-in Manager** is not available in Natural Studio, you have to enable the use of plug-ins as described below.

≫ **To enable the use of plug-ins**

1   From the **Tools** menu, choose **Options**.

    The **Options** dialog box appears.

2   Choose the **Workspace** tab.

3   Activate the **Enable Plug-ins** check box.
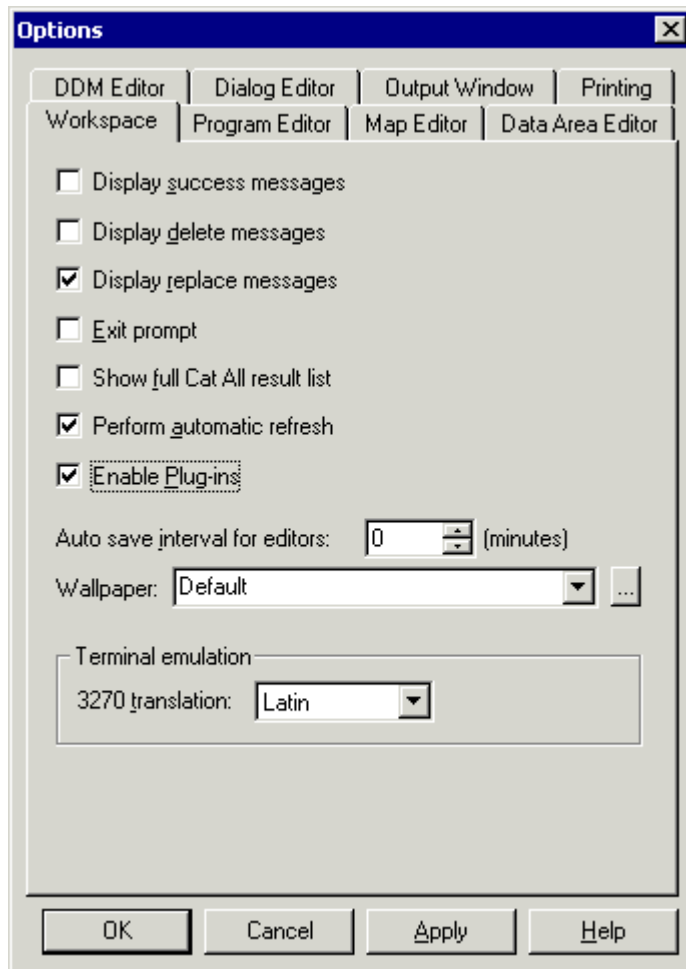
4   Choose the **OK** button.

The **Plug-in Manager** command and the corresponding toolbar button are now available (see below). When the use of plug-ins is not enabled, this command and toolbar button are not shown.

Activating a Plug-in

A plug-in is not active by default. It can be activated when the Plug-in Manager has been enabled.

Two types of activation mode are available:

▪ **Automatic**
The plug-in is automatically activated each time Natural is started.

■ **Manual**
The plug-in must be activated manually on demand (default).

>> **To activate a plug-in**

1   From the **Tools** menu, choose **Configuration Tools > Plug-in Manager**.

Or:

Choose the following toolbar button:

🔁

> **Note:** The display of the toolbar containing this button can be switched on and off by choosing **Customize** from the **Tools** menu.

The **Plug-in Manager** window appears.

2   Select the entry for the plug-in that you want to activate.

3   Click the right mouse button or press SHIFT+F10 and from the resulting context menu, choose **Activation mode > Automatic**.

This does not automatically activate the plug-in 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 or press SHIFT+F10 while the entry for the plug-in is still selected and from the resulting context menu, choose **Activate**.

Connecting to a Development Server

In order to work with a plug-in, you have to connect to a mapped Natural development server.

Once a development server has been mapped, a node for this development server session is shown in the tree. To connect to a mapped development server, simply expand the node (or double-click the node, or select the node and press ENTER). If required, specify a password in the resulting **Map Environment** dialog box (detailed information on this dialog box is provided below).

When the required development server has not yet been mapped, proceed as described below.

≫ **To map to a development server**

1   From the **Tools** menu, choose **Map > Environment**.

Or:

Choose the following toolbar button:

> **Note:** The display of the toolbar containing this button can be switched on and off by choosing **Customize** from the **Tools** menu.

The **Map Environment** dialog box appears. Your user ID is automatically provided.

2   In the **Host name** text box, enter the name of the development server.

3   In the **Server port** text box, enter the TCP/IP port number of the development server.

4   Optionally. In the **Environment name** text box, enter the name that is to appear in the tree. If you leave this text box blank, a combination of server name and port number is shown in the tree.

5   If dynamic parameters are required for your development server, specify them in the **Session parameters** text box. Otherwise, leave this text box blank.

6   If Natural Security is installed on the development server, specify the required password in the **Password** text box. Otherwise, leave this text box blank.

7   Choose the **OK** button.

When the connection has been established, all libraries (according to the security profile) for this session are shown in your library workspace. You are automatically logged on to your default library.

4   **Introduction**

What is Object Description?

Object Description is available as an optional plug-in unit for Natural Studio.

With Object Description, you can document Natural sources in Predict via Natural Studio, and you can manipulate and retrieve data stored by Predict on the server.

In addition, you can use Object Description to manage external objects (generation, comparison and administration).

Restrictions

Some functions are only available in Predict.

In this version of Object Description, it is not possible to create new object types. This is currently only possible with Predict.

In this version of Object Description, generation and incorporation is supported for Adabas and DB2 structures. This includes generation and incorporation of the following:

- Adabas databases (incorporation only),
- Adabas files,
- DB2 databases,
- DB2 procedures/functions (generation only),
- DB2 storagegroups,
- DB2 tablespaces,
- DB2 tables/views,
- DDMs for Natural (generation only),
- activation of automatic processing rules (generation only).

Generation and incorporation of other external objects is currently only possible with Predict.

Benefits

With Object Description, locking of documentation objects takes place. This feature is not supported in Predict. See *Locking of Documentation Objects* for further details.

5   Elements of Object Description

When Object Description has been activated in the Plug-in Manager, additional elements are available in the Natural Studio window:

Menu Commands

When Object Description has been activated, the **Tools > Development Tools** menu provides the cascading menu **Object Description** with the following commands:

Command	Using this command, you can ...
New Object	Add a new documentation object.
All Objects	Invoke a tree view window containing all documentation objects.
Navigation Model	Select a navigation model that has been defined in Predict.
Find Objects	Search for specific documentation objects.

Context Menus

When the current context (that is, the selected item) allows it, the above commands can be chosen from a context menu.

A context menu also contains further plug-in-specific commands such as **Open**, **Filter** and **Delete**. These commands are described later in this documentation.

> **To invoke a context menu**

1   Select the item for which you want to invoke a context menu.

2   Click the right mouse button.

Or:

Press SHIFT+F10.

Or:

Press the Windows symbol on your keyboard.

The context menu appears and you can now choose the required command.

Toolbar

When Object Description has been activated, an additional toolbar is shown. The toolbar buttons represent the following menu commands:

New Object

All Objects

Navigation Model

Find Objects

> **Note:** The display of this toolbar can be switched on and off by choosing **Customize** from the **Tools** menu.

6 Invoking an Overview of All Documentation Objects

Invoking the Tree View Window with All Documentation Objects

During development, you can document objects directly in the library workspace or application workspace (see *Managing Natural Objects*). However, it is also possible to invoke a separate tree view window, containing all documentation objects.

≫ **To invoke the tree view window**

■ From the **Tools** menu, choose **Development Tools > Object Description > All Objects**.

Or:

Choose the following toolbar button:

The tree view window appears. It contains the top-level node **Documentation Objects**.

When you expand the **Documentation Objects** node, nodes for all object types (predefined object types and user-defined object types) are shown. The object types to be shown can be reduced using a filter; see *Defining the Object Types to be Shown*.

When you expand the node for an object type, the defined documentation objects of that type are shown. You can also apply a filter to an object type, for example, to show only databases of type Adabas; see *Applying a Filter to an Object Type*.

When you expand the node for a documentation object, nodes for all active associations of that object are shown. Some of these nodes can be expanded further.
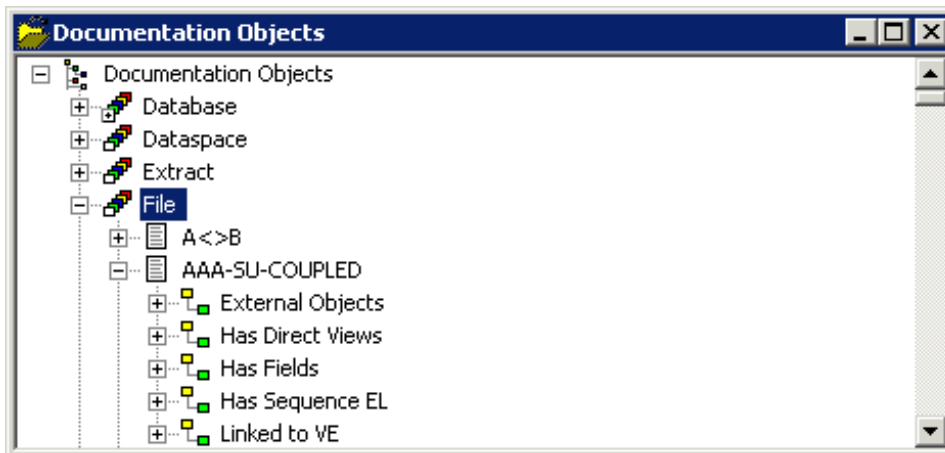
The following icons are shown for the nodes in the tree:

Top-level node for all documentation objects

Object type

Filtered object type

Documentation object (black)

Dummy (grey)

Placeholder (red)

Link

Filtered link

External Objects

Opening a List View Window
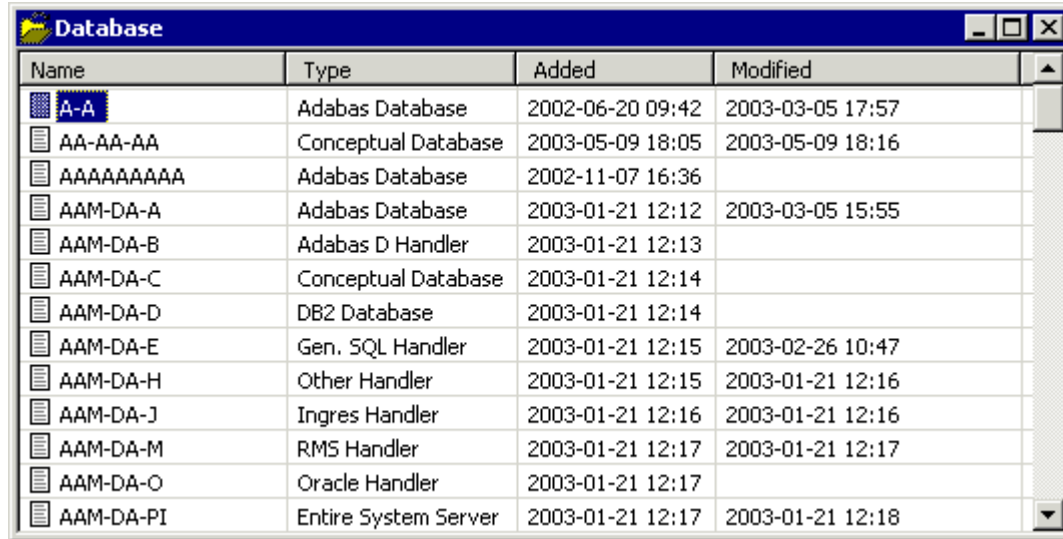
You can open a list view window for each object type and association that is shown in the tree view window. The list view window provides more information than the tree view window. For example, it shows the type of an object (such as "Conceptual Database") and the date and time when an object was added and last modified.

In the list view window, it is possible to select several objects at the same time (which is not possible in the tree view window). This is helpful, for example, if you want to delete several objects at the same time.

≫ **To open a list view window**

1   In the tree view window for the documentation objects, select the object type or association for which you want to open a list view window (for example, the predefined object type Database).

2   Invoke the context menu and choose **Open**.

The list view window appears. Example:

When the list view window does not show all defined objects of the object type, a filter has been applied. See *Applying a Filter to an Object Type*.

Filtering Documentation Objects

Using a filter, you can reduce the number of items that are shown in the **tree view window** and in the **list view window**. The filter criteria are saved individually for each user.

The following topics are covered below:

- Defining the Object Types to be Shown
- Applying a Filter to an Object Type

Defining the Object Types to be Shown

You can reduce the number of predefined and user-defined object types. For example, you can define a filter which only shows your own user-defined objects.

≫ **To define the object types to be shown**

1   In the tree view window, select the top-level node **Documentation Objects**.

2   Invoke the context menu and choose **Display Filter**.

   The **Filter** dialog box appears. The object types that are currently shown are selected. For example:
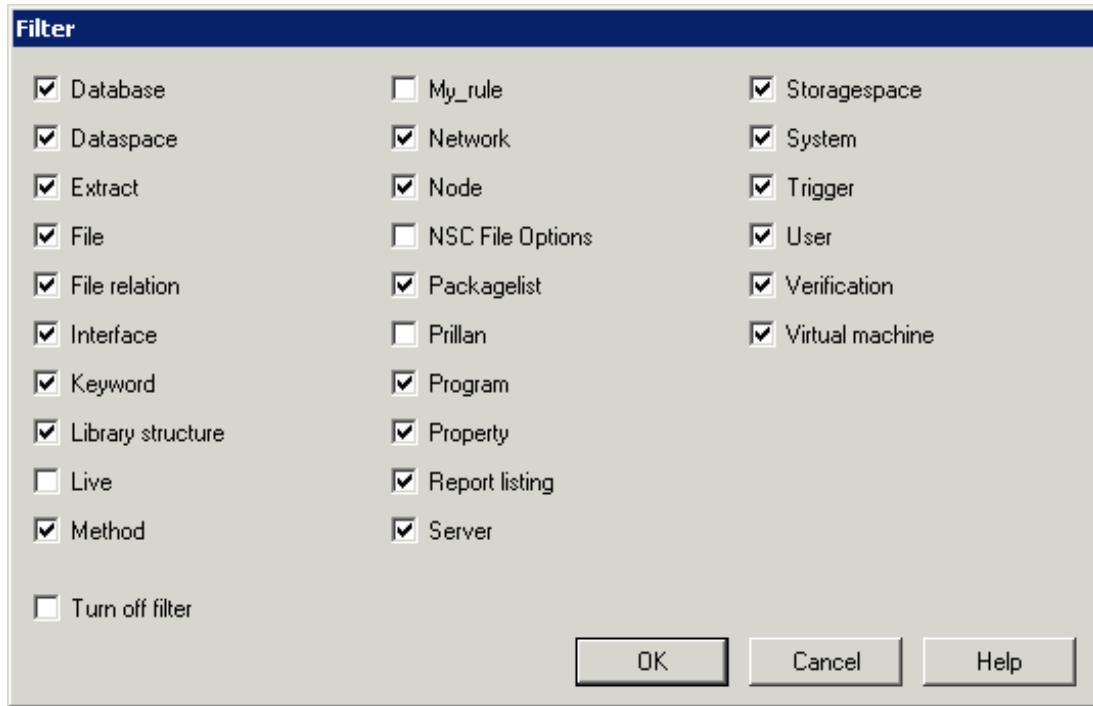
3   Select the object types that are to be shown, and/or deselect the object types that are not to be shown.

     If you select more than half of the displayed object types, the **Select all** button will be high-lighted. If you choose the **Select all** button, all remaining object types are selected.

     If you deselect more than half of the displayed object types, the **Deselect all** button will be highlighted. If you choose the **Deselect all** button, all remaining object types are deselected.

     When you select the **Turn off filter** check box, your filter is not applied. This is useful if you want to deactivate your filter temporarily.

4   Choose the **OK** button.

     The content of the tree view window changes. The tree now only shows the object types that you have defined in your filter.

Applying a Filter to an Object Type

You can reduce the number of objects that are shown for a specific object type. For example, you can define a filter for the predefined object type Database which only shows the databases of type Adabas. When a filter has been applied to an object type, the following icon is shown in the tree:

≫ **To apply a filter to an object type**

1   Select the object type to which you want to apply a filter (for example, the predefined object type Database).

2   Invoke the context menu and choose **Display Filter**.

     The **Filter** dialog box appears. The type(s) that are currently shown are listed in the text box of the **Type** drop-down list box (only as much as fit in the text box). Example for the object type Database:
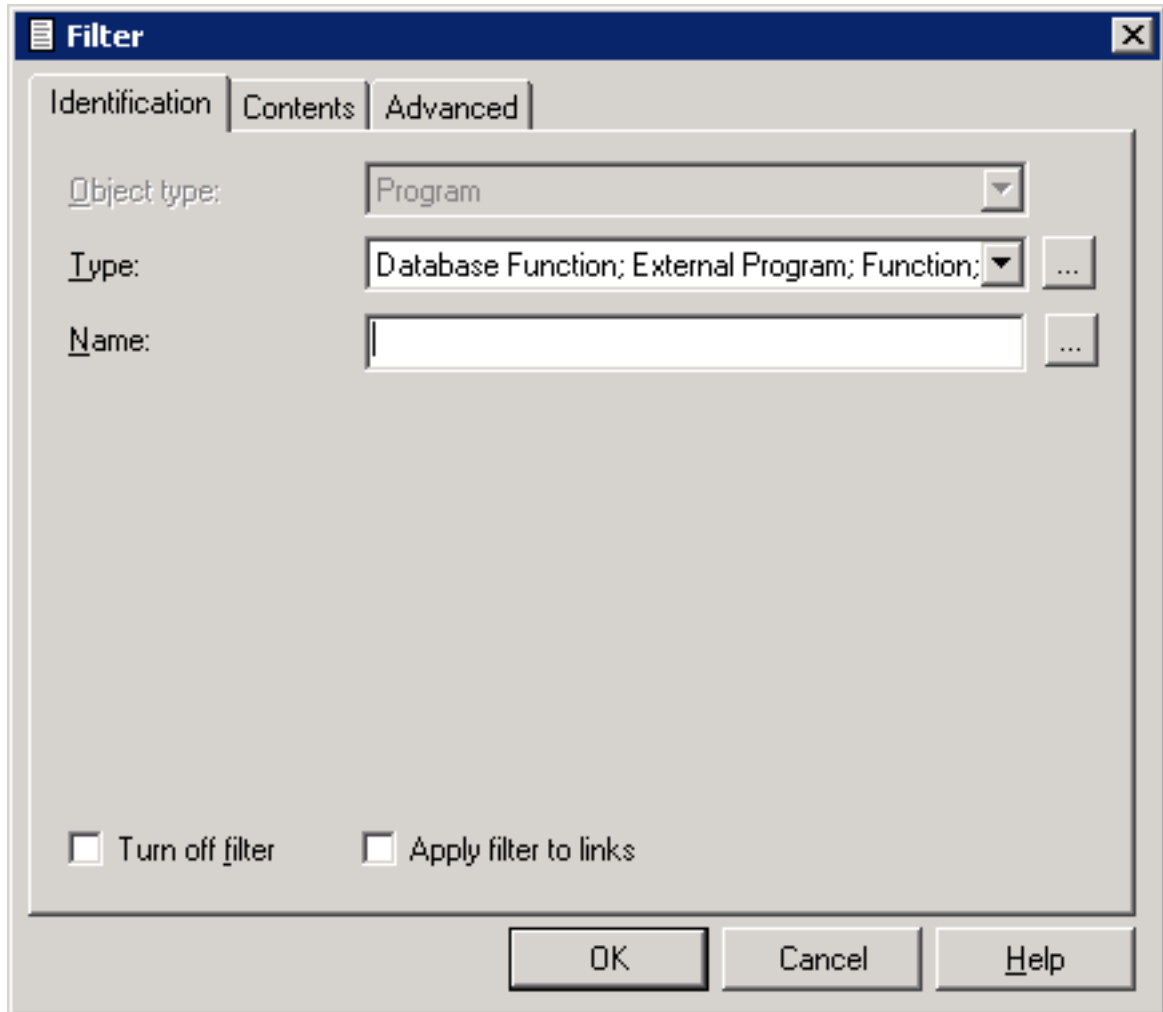
When you select the **Turn off filter** check box, your filter is not applied. This is useful if you want to deactivate your filter temporarily.

When you select the **Apply filter to links** check box, your filter is also applied to links.

3 If you only want to define a filter for a single type, select the type from the **Type** drop-down list box.

Or:

If you want to define a filter for more than one type, click the **Choose** button which is shown next to the **Type** drop-down list box.

The **Select** dialog box appears. The types that are currently shown are selected. Example for the object type Database:
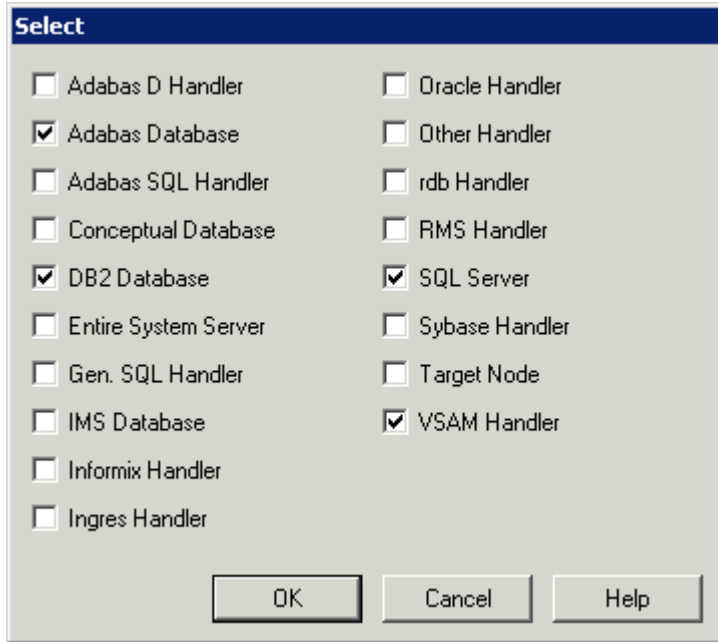
Select the types that are to be shown, and/or deselect the types that are not to be shown.

Choose the **OK** button to close the **Select** dialog box. In the **Filter** dialog box, the selected types (as much as fit in the text box) are now shown in the text box of the **Type** drop-down list box.

4   If you want to further restrict your filter selection to object types with a specific name, you can enter the name or the first character(s) of the name followed by an asterisk (*) in the **Name** text box.

Or:

If you want to define a filter for more than one name, click the **Choose** button which is shown next to the **Name** text box.

The **Names** box appears.
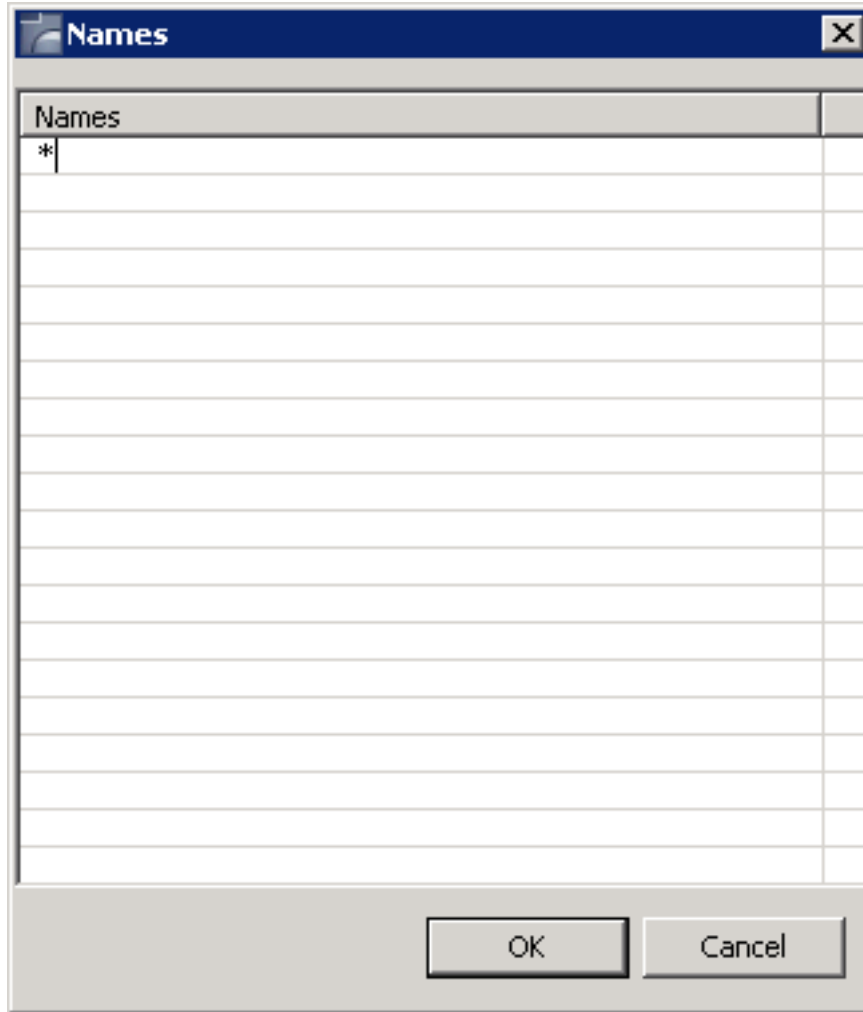
Enter the names or the first character(s) of the name(s) followed by an asterisk (*). Choose the **OK** button to close the **Names** dialog box. In the **Filter** dialog box, the defined names (as much as fit in the text box) are now shown in the **Name** text box.

5   You can specify further filter criteria on the different tabs of the **Filter** dialog box. The same tabs are used in the **Find Documentation Objects** dialog box. See *Finding Documentation Objects* for information on these tabs.

6   When you have defined all filter criteria, choose the **OK** button to close the **Filter** dialog box.

When the node for the selected object type is currently open in the tree, you can see that its contents changes. Only nodes for the types that you have selected are now shown.

Finding Documentation Objects

You can search for objects of a given type. The found objects are shown in a list view window.

≫ **To find an object**

1   From the **Tools** menu,Natural Server connection choose **Development Tools > Object De-scription > Find Objects**.

Or:

Choose the following toolbar button:

🔍

Or:

Select a documentation object and from the context menu, choose **Find Objects**.

The **Find Documentation Objects** dialog box appears. This dialog box provides several tabs (some of these tabs are only shown for specific object types):

■ **Identification**

■ **Contents**

■ **Advanced**

■ **Specific**

■ **More Specific**

2   Specify your search criteria on the different tabs as described below.

3   Click the **Start Find** button.

The **Find Documentation Objects** dialog box is closed and all found objects are shown in a list view window. Example:

Name	Type	Added	Modified
DB180	Adabas Database	2004-02-05 15:26	2004-09-03 15:01
DB188	Adabas Database	2004-02-05 15:27	2004-08-11 13:35
DB18000-SU	Adabas Database	2004-03-25 15:17	2004-03-25 15:19

Adabas Database (ID='db*')

You can manage the found objects using the context menu. For example, you can open, delete or rename an object.

When no objects meeting the specified search criteria are found, the above window is empty.

Identification

All available object types are provided in a drop-down list box .

Multiple objects can be selected using the **Choose** button.

When a documentation object was selected before issuing the **Find Objects** command, the object type and, if appropriate, type of the selected documentation object are automatically preselected.

Option	Description
Object type	Select the desired object type from this drop-down list box.
Type	Only available for documentation objects with different types. ▪ If you only want to find a single type, select the type from the **Type** drop-down list box. An asterisk (*) in this drop-down list box means that all types of the selected object type will be found. ▪ If you want to find more than one type, click the **Choose** button which is shown next to the **Type** drop-down list box. The **Select** dialog box appears. See the example below.

Option	Description
Name	If you know the name of the desired object, enter it in this text box. You can also specify the first character(s) of the name followed by an asterisk (*) to find all object names that start with these characters.

Example - find more than one object type:

The following dialog box appears.

Example - find more than one type:

The following dialog box appears for object type Program.
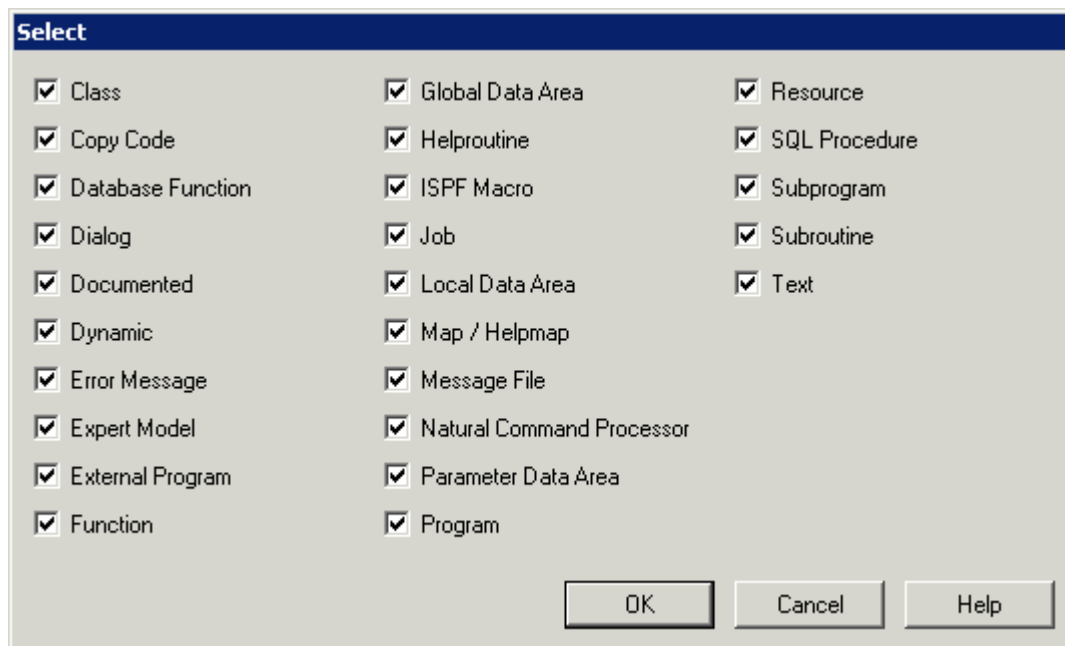
The currently defined types are selected. You can now select the required types, or deselect the types that are not to be considered in your search. Choose the **OK** button to close the **Select** dialog box. On the **Identification** tab, the selected types (as much as fit in the text box) are now shown in the text box of the **Type** drop-down list box.

Contents

You can search for objects that contain specific text.
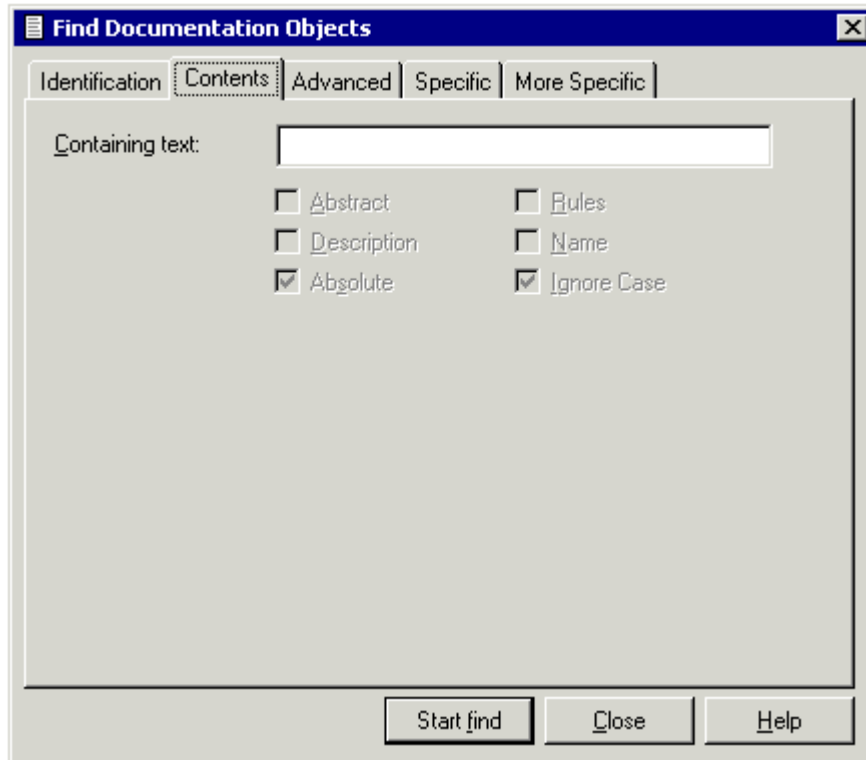
Option	Description
Containing text	Specify the text. The check boxes on this tab are only available when you have entered text in this text box.
Abstract	If selected, the abstract is searched for the specified text.
Description	If selected, the extended description is searched for the specified text.
Absolute	If selected, embedded text strings are found (for example, the embedded text string "mari" in "primarily"). If not selected, only occurrences of the search string that are delimited by blanks or special characters are found.
Rules	If selected, rules are to be scanned for the search string. This option applies exclusively to verifications. With objects of other types, this check box is disabled.
Name	If selected, objects will only be selected if the specified text occurs in the name (object ID).
Ignore case	If selected, no distinction is made between upper-case and lower-case characters.
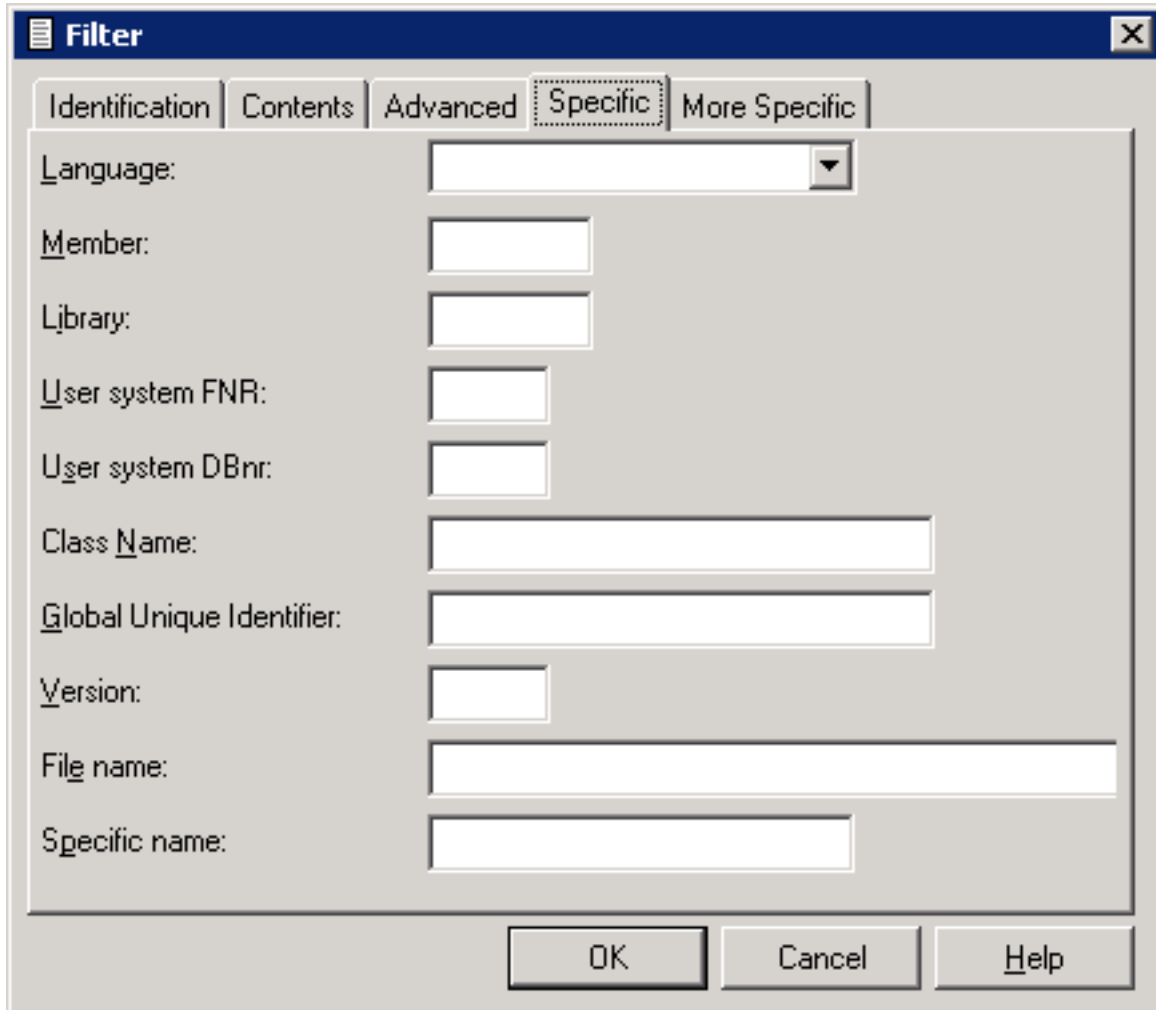
Advanced

You can search, for example, for objects which contain specific keywords or which have a specific owner.

Option	Description
With keyword	Only objects with the given keywords are included in the selection. Up to five keywords can be specified. Asterisk notation is possible.
AND/OR	When the option button **AND** is selected, the object must contain all specified keywords. When the option button **OR** is selected, the object must contain one of the specified keywords.
With owner	Only objects with the given owner are included in the selection. Asterisk notation is possible.
But not with keyword	Objects with the given keyword are excluded. Asterisk notation is possible.
Included in Extract	Only objects contained in the specified extract are included in the selection. With asterisk notation you can specify a range of extracts.
From date	Only objects that were added or modified on or after this date will be selected. If a modification date exists, this will be evaluated. If no modification date exists for an object, the creation date is evaluated. Format "YYYY-MM-DD" in the first box and "HH:II" in the second box.

Specific

The search options on this tab depend on the object type that has been selected on the **Identification** tab. This tab does not appear for all object types. Example for programs:

Specify all required search options.

More Specific

If there are more search options than can be displayed on the **Specific** tab, the **More Specific** tab is available. Example for programs:
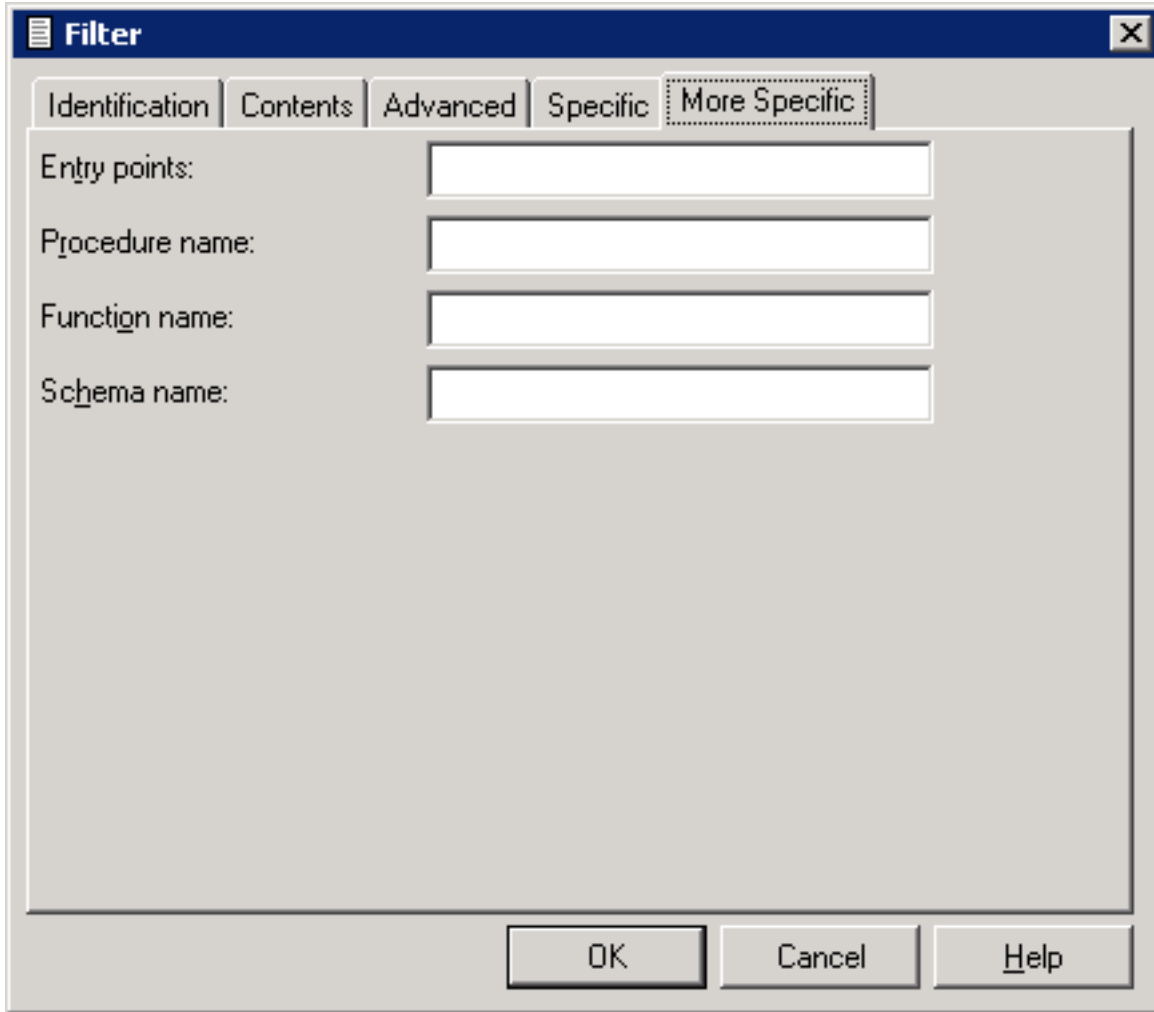
Specify all required search options.

Displaying the Properties

You can display the properties for each node shown in the tree view window for the documentation objects and for each object shown in a list view window.

≫ **To display the properties**

1   Select the desired documentation object or node.

2   Invoke the context menu and choose **Properties**.

The **Properties** dialog box appears. Different information is shown in this dialog box, depending on the selected item:

■ **Top-level node**
The FDIC database ID and the file number are shown.
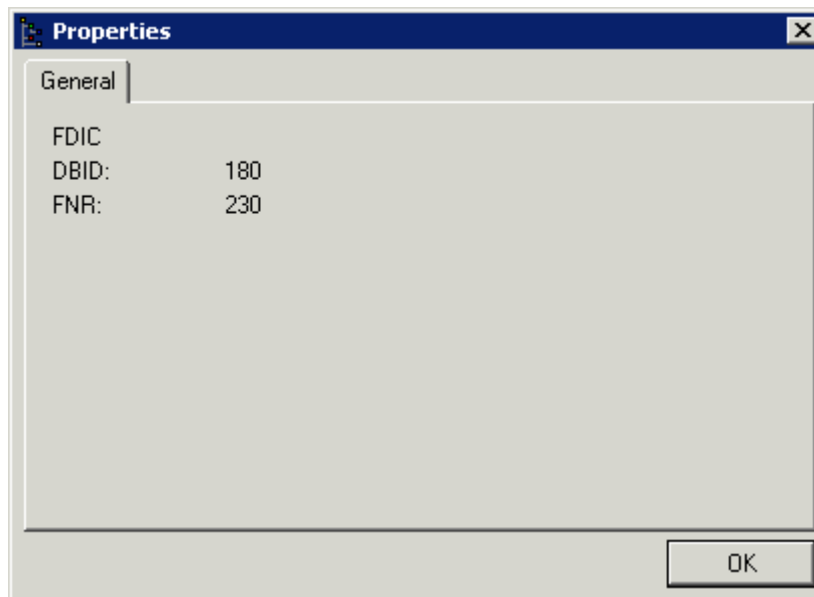
■ **All other nodes**
The dialog boxes for all other nodes contain two tabs: **General** and **Abstract**.

The information shown on the **General** tab depends on the selected item. The creation date, however, is shown for all items. This is illustrated by the following examples.

> **Note:** A user ID can be shown next to the date, but only if it is stored in Predict. Your Predict administrator may have defined that information on who created or changed an object will not be stored.

■ For an object type, its name is shown.
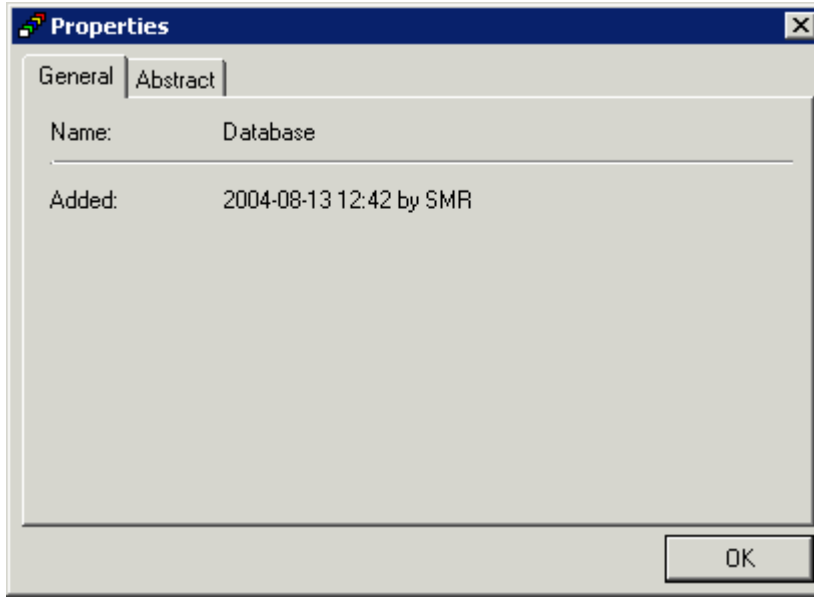
■ For an object of a specific object type, name, type (for example, Adabas database) and, if applicable, modification date are shown.
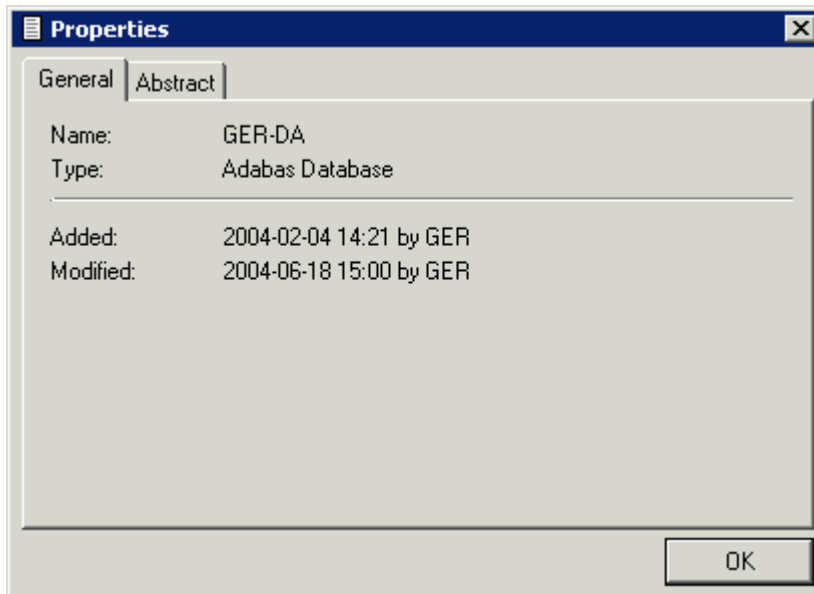
In case of the object type File, the date when the fields have last been modified is also shown.

■ For an association, name, source, destination and direction are shown.
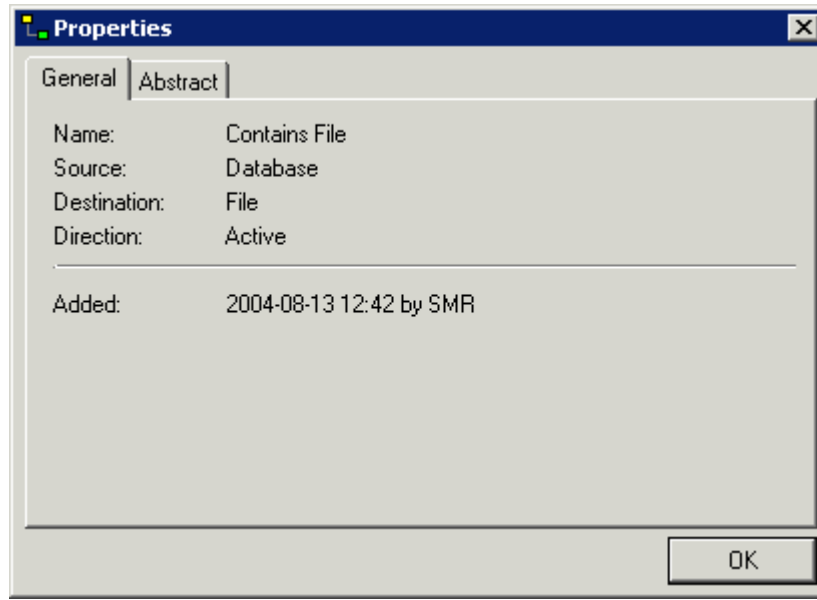
3   To close the dialog box, choose the **OK** button.

7 Managing Natural Objects

Redocumenting Natural Objects

You can create documentation objects for all Natural objects that are shown in the library workspace or application workspace.

The following restrictions apply for Natural objects:

■ Currently, it is only possible to redocument Natural sources which reside on the server side.

■ DDMs and Libraries in the **Navigator** view are not supported.

This feature uses the defaults for the redocument function that have been defined in Predict. When you redocument a Natural object, only a message appears indicating that the object has been redocumented.

The Predict processing option "Add and Replace" is always used. This means: a documentation object of type Program is created for the selected Natural object. Or, when a library has been selected, documentation objects of type Program are created for all Natural objects in this library. Existing documentation objects are replaced.

It is also possible to create documentation objects in a different way. See the sections *Opening the Description for a Natural Object* and *Adding a New Documentation Object* for further information.

⧉ **To redocument a Natural object**

1   Select the Natural object in the library workspace or application workspace.

> 💡   **Tip:** In a list view window, it is possible to select more than one object.

2   Invoke the context menu and choose **Object Description > Redocument**.

⧉ **To redocument all Natural objects in a library**

1   Select the library in the library workspace.

> 💡   **Tip:** In a list view window, it is possible to select more than one library.

2   Invoke the context menu and choose **Object Description > Redocument Objects**.

Displaying the Description for a Natural Object

Using the **Display Description** command, you can display information on a documentation object for a Natural object, DDM or library.

When a documentation object does not yet exist, a warning appears in the result window indicating that the object is not documented.

When a documentation object does already exist, an object type-specific window appears and you can view the defined information. This is the same window which appears when you open the description for a Natural object, DDM or library (**see below**). The only difference is that the information is provided in read-only mode and that certain command buttons are therefore not available.

> **Note:** DDMs on platforms running Natural for Windows or UNIX are only supported, if they reside in library SYSTEM or the Natural system file respectively, for DDMs are defined via the Natural profile parameter FDDM.

≫ **To display the description for a Natural object**

1   Select the Natural object in the library workspace or application workspace.

2   Invoke the context menu and choose **Object Description > Display Description**.

When a documentation object does already exist, a window for the object type Program appears. See *Program* in *Predefined Object Types in Predict* for further information.

In case of a DDM, a window for the object type File appears. See *File* in *Predefined Object Types in Predict* for further information.

3   Choose the **OK** button to close the window.

Opening the Description for a Natural Object

Instead of redocumenting Natural objects, you can also use the **Open Description** command to create documentation objects for the Natural objects, DDMs or libraries that are shown in the library workspace or application workspace. In contrast to the redocument function, only the information for the implementation pointer is filled. When a Natural object is selected, the language ("Natural" in this case) is also filled. Exception: in case of a DDM an implementation pointer does not exist; the connection is established via the name. All other information has to be defined manually.

The implementation pointer is used to establish the connection between the Natural object and the documentation object. In case of a Natural object it consists of member name, library name, user system file number and user system database number. When you open the description for a Natural object, the best hit principle is applied: the member with the most detailed implementation

pointer is shown. So that a matching documentation object can be found, at least the member names must match. Exception: in case of a DDM an implementation pointer does not exist; the connection is established via the name.

In case of a library, the implementation pointer consists of library name, user system file number and user system database number. So that a matching documentation object can be found, at least the library names must match.

If no documentation object is found for the selected Natural object or library, it will be created.

When a documentation object can be found, you can modify it.

> **Note:** DDMs on platforms running Natural for Windows or UNIX are only supported, if they reside in library SYSTEM or the Natural system file respectively, for DDMs are defined via the Natural profile parameter FDDM.

≫ To open the description for a Natural object

1   Select the Natural object in the library workspace or application workspace.

2   Invoke the context menu and choose **Object Description > Open Description**.

A window for the object type Program appears. See *Program* in *Predefined Object Types in Predict* for further information.

In case of a DDM, a window for the object type File appears. See *File* in *Predefined Object Types in Predict* for further information.

> **Note:** When a documentation object cannot be found for a DDM, a file of type conceptual is created. A field list is not created in this case. If you require the field list, it is recommended that you create the documentation object using the Schema Generation plug-in and its incorporation wizard.

3   Specify all required information. See also *Object Type-Specific Windows*.

4   Choose the **OK** button to create/modify the documentation object.

≫ To open the description for a library

1   Select the library in the library workspace or application workspace.

2   Invoke the context menu and choose **Object Description > Open Description**.

A window for the object type System (system type Application Library) appears. See *System* in *Predefined Object Types in Predict* for further information.

3   Specify all required information. See also *Object Type-Specific Windows*.

4   Choose the **OK** button to create/modify the documentation object.

8 Managing Documentation Objects

Object Type-Specific Windows

An object type-specific window appears when you open or display an existing documentation object, or when you add a new documentation object.

The object type-specific windows have different tabs with different types of edit controls.

- Tabs
- Simple Edit Controls
- Text Editor
- Tables
- Command Buttons

Tabs

Two types of tabs are available:

- Common tabs that are always the same for all object types are **General**, **Abstract**, **Keywords**, **Owners** and **Extended Description**. See *Global Attributes* in the reference documentation *Predefined Object Types in Predict*.

- Tabs that are only shown for this type of object. See the object type-specific descriptions in the reference documentation *Predefined Object Types in Predict*.

Several tabs require that you specify mandatory information. Such a tab shows one of the following symbols next to the tab name:

- Mandatory information is missing on this tab. All field names on this tab where mandatory information must still be provided are indicated by the color red.

- All mandatory information has been specified on this tab. All field names on this tab where mandatory information has already been provided are indicated by the color green.

Simple Edit Controls

Some tabs provide simple edit controls such as text boxes, check boxes or drop-down list boxes.

For the description of check boxes, the reference documentation *Predefined Object Types in Predict* uses the abbreviations Y (yes) and N (no). Y means that the check box is selected, and N means that the check box is not selected.

Text Editor

Some tabs such as the **Abstract** tab provide a simple text editor. Edit commands like **Copy** and **Paste** are available in a context menu. Example:
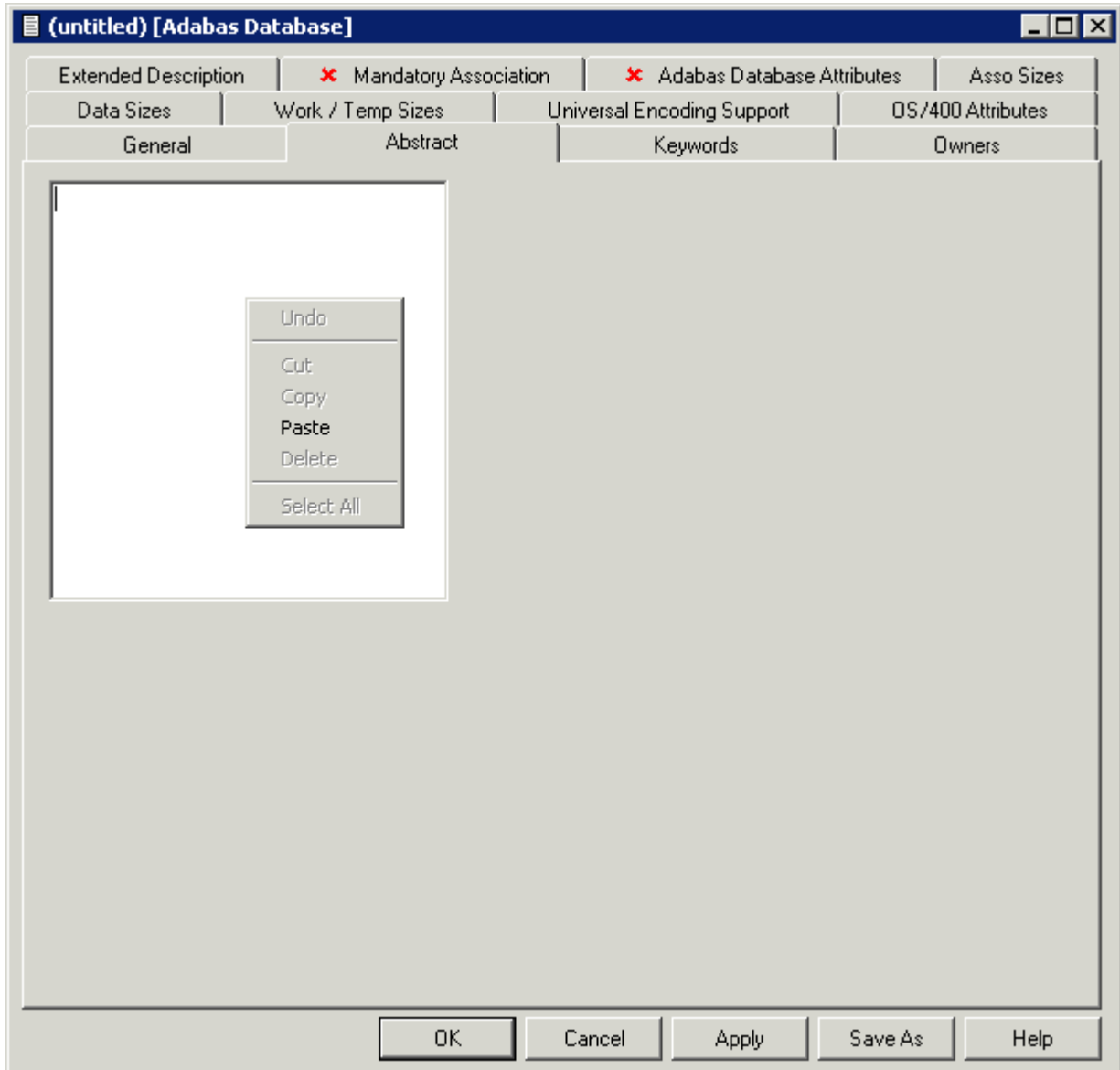
Tables

Some tabs provide tables to which you can add new information. A table may contain one or more resizable columns. Example:
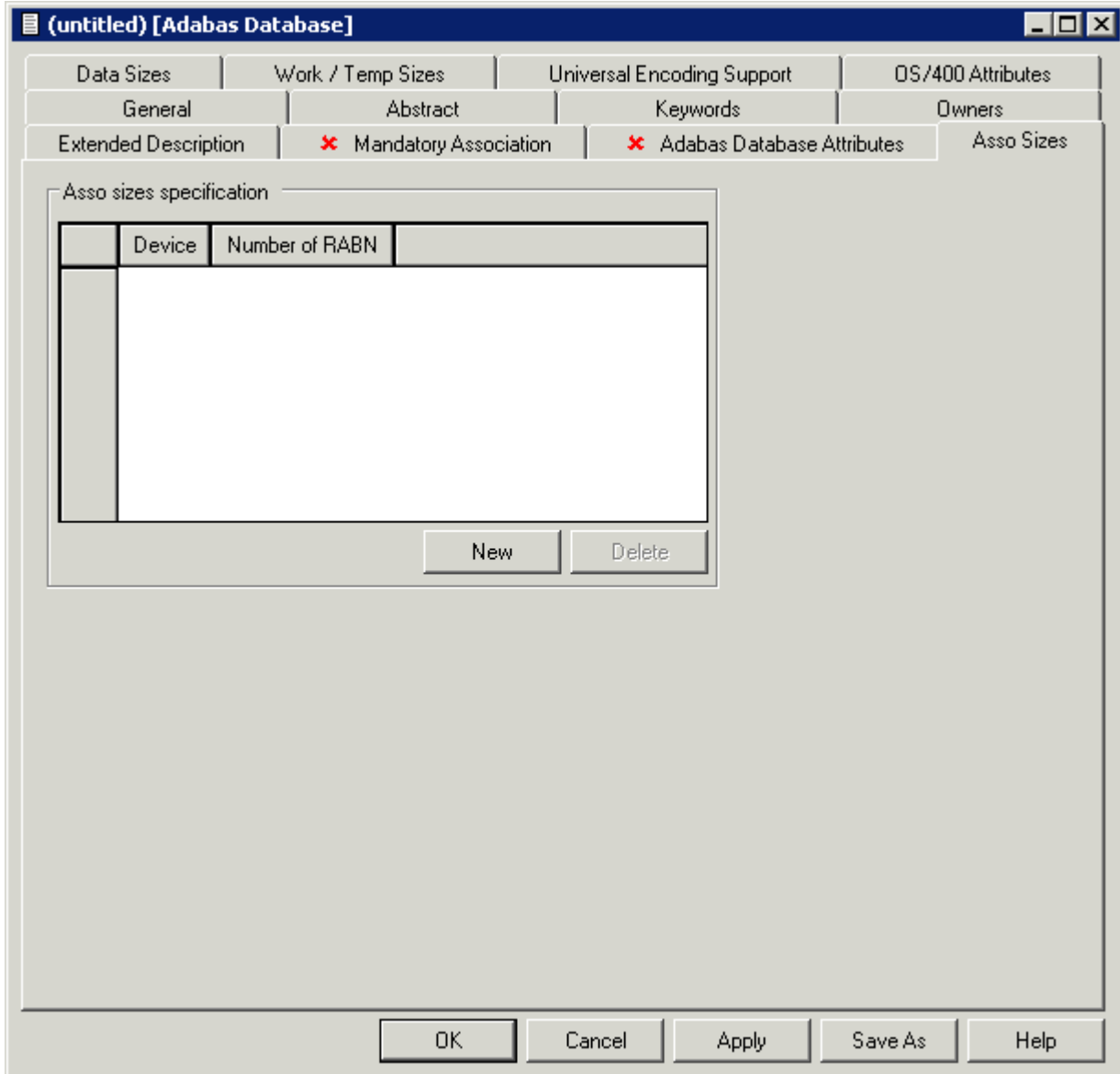
The following command buttons are provided with a table (they are dimmed in read-only mode):

Command Button	Description
New	Creates a new row containing several cells in which you can enter information.
Delete	Deletes the selected row.

To modify existing information in a cell of the table, simply overwrite it. You can either enter information directly in a cell or select it from a drop-down list box.

Command Buttons

The object type-specific windows that have been invoked using the **New** or **Open** command provide the following command buttons:

Command Button	Description
OK	Saves all changes and closes the window.
Apply	Saves all changes. The window is not closed and you can apply further changes.
Save As	Saves the object under a new name. The **Save As** dialog box appears in which you have to specify a name for the new object.

> **Notes:**

1. When you save a new object and a name has not yet been specified, the **Save Documentation As** dialog box appears. In this case, you have to specify a name for the new documentation object and choose the **OK** button.

2. When mandatory information has not been specified, an appropriate error message is shown in a dialog box. When you then choose the **OK** button, the tab on which information is missing is automatically shown. The documentation can only be saved after all mandatory information has been specified.

Adding a New Documentation Object

You can manually add documentation objects for all predefined and user-defined objects types in Predict. You have to specify all information yourself, including the implementation pointer. This function is helpful, if documentation is to take place before implementation. Information on the implementation pointer can be found under *Opening the Description for a Natural Object*.

> **Tip:** When a Natural object already exists, it is recommended that you redocument it. See *Redocumenting Natural Objects*.

There are two ways to add a documentation object. You can use either the **Tools** menu or a context menu.

≫ **To add a new documentation object using the Tools menu**

1   From the **Tools** menu, choose **Development Tools > Object Description > New Object**.

Or:

Choose the following toolbar button:

📝

The **Object Type** dialog box appears.
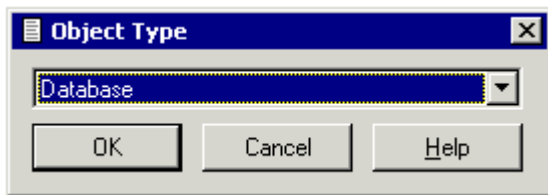
2   Select the desired object type and choose the **OK** button.

In some cases, you have to select a type (for example, a database type) in an additional dialog box. The next window then shows object-specific information.

3   Specify all required information as described in the reference documentation *Predefined Object Types in Predict*. See also *Object Type-Specific Windows*.

≫ **To add a new documentation object using a context menu**

1   In the tree view window or list view window for the documentation objects, select the object type for which you want to add a new object.

2   Invoke the context menu and choose **New**.

> **Note:** The **Object Type** dialog box does not appear when using a context menu.

In some cases, you have to select a type (for example, a database type) in a dialog box. The resulting window then shows object-specific information.

3   Specify all required information as described in the reference documentation *Predefined Object Types in Predict*. See also *Object Type-Specific Windows*.

Locking of Documentation Objects

When a documentation object is added, modified, renamed or deleted, it is automatically locked to prevent concurrent updates.

When working with associations and links, the following applies:

- When the **Unlink/Link** command is used, the parent object is locked. See also: *Linking and Unlinking Associations*.
- When the **Attributes of Link** command is used, both the parent and child object are locked. See also: *Modifying the Attributes of a Link*.

> **Caution:** Currently, locking of documentation objects is only possible on the client side when using Object Description. When performing actions on documentation objects in Predict on the server side, the locking mechanism is ignored. This can result in inconsistent data.

Opening/Displaying an Existing Documentation Object

Two different commands are available for invoking a window in which you can view and/or modify a documentation object:

Command	Description
Open	With this command it is possible to modify a documentation object.
Display	With this command it is only possible to view the information for a documentation object, it is not possible to modify it.

≫ To open/display a documentation object

1   Select the documentation object.

2   Invoke the context menu and choose either **Open** or **Display**.

    Or:

    Double-click the documentation object.

    An object type-specific window appears. See also *Object Type-Specific Windows*.

Renaming a Documentation Object

You can change the object ID with the **Rename** command. The new object ID must not already exist in the dictionary.

≫ **To rename a documentation object**

1 Select the documentation object that you want to rename.

2 Invoke the context menu and choose **Rename**.

   A dialog box appears prompting for a new name.

3 Specify another name and choose the **OK** button.

Purging a Documentation Object

You can purge documentation objects using the **Delete** command.

For further information on the purge process, see the object type-specific descriptions in the reference documentation *Predefined Object Types in Predict*.

≫ **To purge a documentation object**

1 Select the documentation object that you want to purge.

   💡 **Tip:** If you want to purge several objects at the same time, you have to open the list view window. See *Opening the List View Window*.

2 Invoke the context menu and choose **Delete**.

   A dialog box appears asking whether you really want to delete the object.

3 To confirm the deletion for the current object, choose the **Yes** button.

   Or:

   To delete all selected objects without further confirmation, choose the **Yes to All** button.

Printing and Saving a Report for a Documentation Object

The information shown in an object-type specific window (which can be invoked with the **Open** or **Display** command) can also be shown as a report in simple text format. It is possible to print and save this report.

≫ **To print and save a report**

1   Select the documentation object.

2   Invoke the context menu and choose **Report**.

A window such as the following appears.

```
GER-DA [Adabas Database]                              _ □ ✕
Name:                             GER-DA
Type:                             Adabas Database

Added:                            2004-02-04 14:21 by GER
Modified:                         2004-06-18 15:00 by GER

Description
  Test

Adabas Database Attributes
  Run mode:                       L - Local
  Physical database number:       13
  Adabas attributes
    Maximal files:                0
    Checkpoint file:              0
    Adabas security:              0
    Size of RABN:                 0 - not specified
    Distr. transaction:           N - No
    Vista access only:            N
  Natural file numbers
    System file (FNAT):
    NAT-Security (FSEC):          0
    Predict (FDIC):               0

Asso Sizes

        OK        Print        Save        Help
```

3   Choose the desired command button:

Command Button	Description
Print	The **Print Setup** dialog box appears. Specify all required information (for example, a different printer or text orientation) and choose the **OK** button.
Save	The **Save Report** dialog box appears. Select the folder in which you want to store the report, specify a report name and choose the **Save** button.

4   To close the window in which the report is shown, choose the **OK** button.

9   Managing Associations and Links

Selecting the Navigation Model

Navigation models are defined in Predict. They can be defined for predefined objects and user-defined objects.

Note: In Predict, the name "retrieval model" is used instead of navigation model.

In the tree view window with the name **Documentation Objects,** all active associations are shown. When a navigation model is used, the display is limited so that only the associations specified in the model are shown. An additional advantage of a navigation model is that it may also show passive associations.

≫ **To select a navigation model**

1 Select the documentation object for which you want to select a navigation model.

Tip: If you want to select a navigation model for several objects, you have to open the list view window. See *Opening the List View Window*.

Or:

Select a Natural object or library in the library workspace or application workspace.

In this case, a navigation model can only be used when a documentation for the selected Natural object or library does already exist. When a documentation object does not yet exist and you issue the command described below, an appropriate warning is shown in the result window.

2 From the **Tools** menu, choose **Development Tools > Object Description > Navigation Model**.

Or:

Invoke the context menu and choose **Navigation Model**.

Or:

Choose the following toolbar button:

The **Navigation Model** dialog box appears. The drop-down list box contains all navigation models defined in Predict for objects of the selected type.
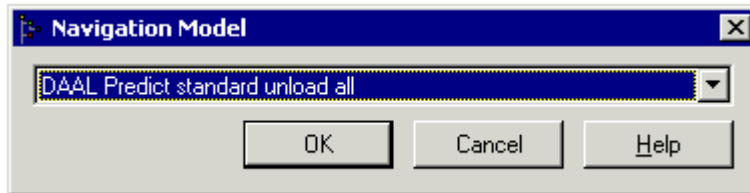
3   Select the desired navigation model from the drop-down list box.

4   Choose the **OK** button.

The **Navigation Model** window appears. The name of the selected navigation model is shown in the title bar. This tree view window displays the node **Selected Objects**. When you expand this node, all documentation objects that you have selected are shown. You can further expand the nodes to check the associations. Example:
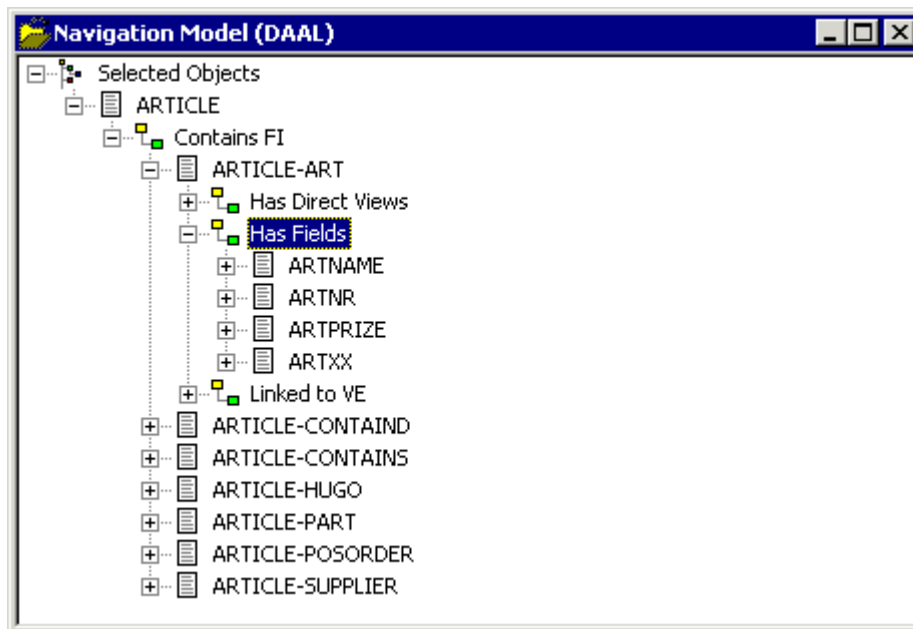
Displaying the Links for an Association

You can invoke a window listing all linked objects contained in a node for an association. This window provides more information than the tree view window. For example, for an Adabas database, it shows the physical file number of a file and the physical distribution type.

≫ **To display the links for an association**

1   Select the node for the desired association in the tree view window for the documentation objects.

2   Invoke the context menu and choose **Display Links**.

A window appears displaying a list of linked objects (children). The name and type of the parent object and the name of the association are shown in the title bar.
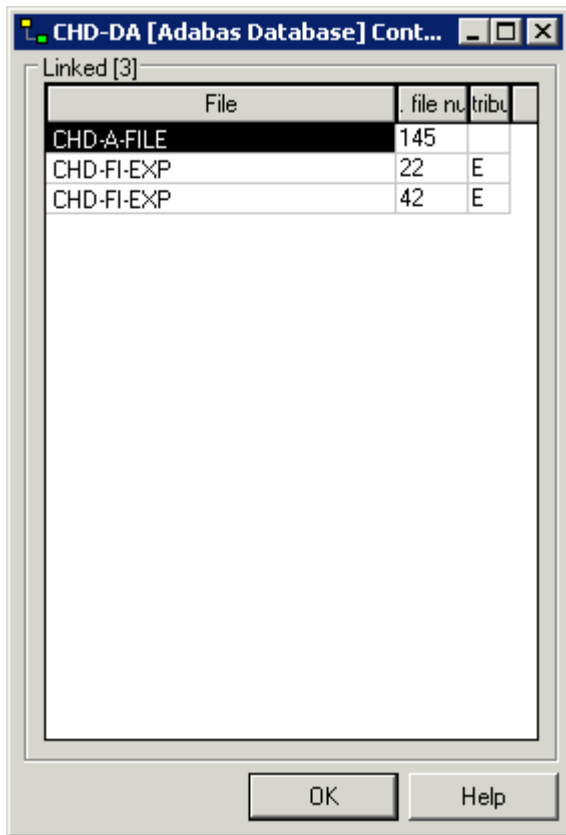
3   Choose the **OK** button to close the window.

Linking and Unlinking Objects

You can link more objects to a parent object or remove linked objects. You can also modify the sequence of the linked objects.

> **To link and unlink objects**

1   Select the node for the desired association in the tree view window for the documentation objects.

2   Invoke the context menu and choose **Unlink/Link**.

> **Note:** There are several associations for which it is not possible to change the list of linked objects. The **Unlink/Link** command is dimmed in these cases. An example of such an association is "Has Fields"; fields can only be maintained via the object type-specific windows which appear for files and fields.

A window appears. The name and type of the parent object and the name of the association are shown in the title bar. A list of linked objects (children) is shown on the right side of the window.
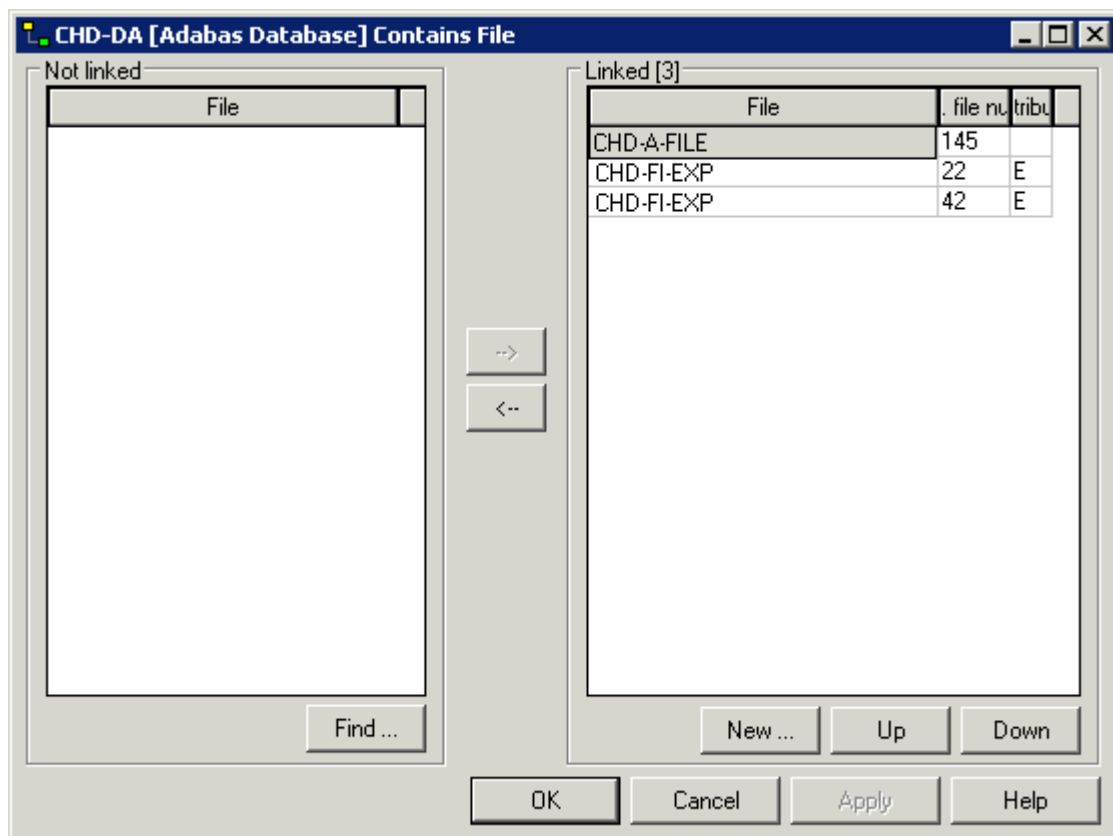
3   Use the following command buttons to link/unlink objects:

Command Button	Description
Find	Invoke the **Find Documentation Objects** dialog box in which you can specify the search criteria for the objects that are to be shown on the left side of the window. Found objects can then be moved to the list of linked objects. For information on the **Find Documentation Objects** dialog box, see *Finding Documentation Objects*.
-->	Move the objects that are currently selected on the left side of the window to the list of linked objects on the right side of the window. See also the description of the **Find** button.
<--	Remove the linked objects that are currently selected on the right side of the window. When a linked object has been removed, it is shown in the list on the left side of the window.
New	Add a new object to the list of linked objects. A dialog box appears in which you have to enter the name for the new object.
Up	Move the selected linked object one position up in the list.
Down	Move the selected linked object one position down in the list.

4   Choose the **OK** button to saves all changes and to close the window.

Modifying/Displaying the Attributes of a Link

This function is only available for links where attributes have been defined for the corresponding association in the metastructure of the Predict data dictionary. With the predefined associations this is the case, for example, for the links "Has Files" of an Adabas database, and for the links "Defined in Server" of a DB2 database or file. With user-defined associations, attributes may also be defined. When such attributes have been defined, it is possible to add or modify their values for a link.

Two different commands are available for invoking a window in which you can view and/or modify the attributes of a link:

Command	Description
Attributes of Link	With this command it is possible to add or modify the attributes of a link.
Display Attributes of Link	With this command it is only possible to view the attributes of a link.

≫ To modify/display the attributes of a link

1   Open the node for the desired association in the tree view window for the documentation objects.

2   Select the desired documentation object.

3   Invoke the context menu and choose either **Attributes of Link** or **Display Attributes of Link**.

   Adabas databases and files only:
   When the logical distribution type "Expanded" or "Partitioned" has been defined, the following **Link** dialog box appears in which you have to select the link to be modified. A number in the drop-down list box stands for the physical file number.
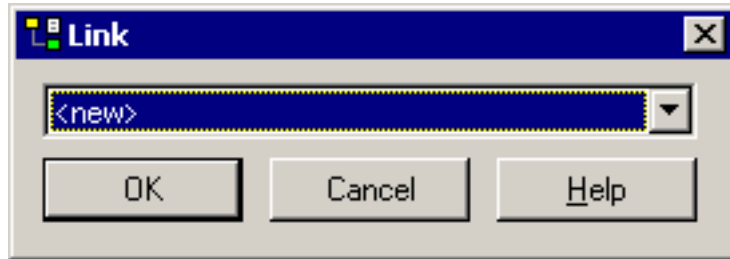
   When the **Link** dialog box has been invoked using the **Attributes of Link** command, it is also possible to add a new link by selecting **<new>** from the drop-down list box. Choose the **OK** button to proceed to the association-specific window (see below).

The tabs that are shown in the resulting window depend on the type of association. See the reference documentation *Predefined Object Types in Predict* for further information.

The following is an example of an association-specific window in which the attributes of the link can be modified.
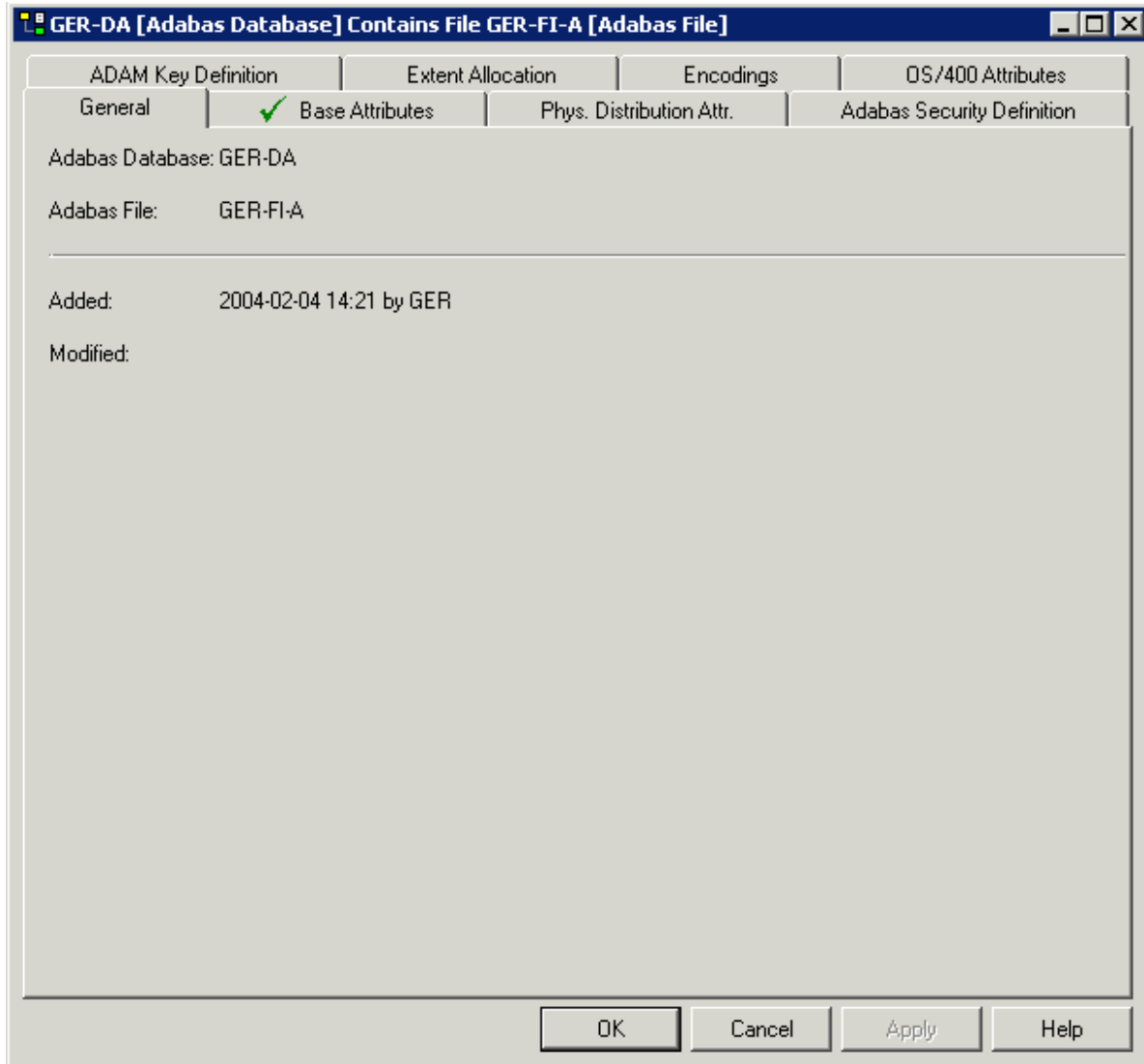
When the attributes cannot be modified, "read-only" is shown in the title bar. In this case, only the command buttons **OK** and **Help** are available.

Printing and Saving a Report for the Attributes of a Link

The information shown in an association-specific window (which can be invoked with the **Attributes of Link** or **Display Attributes of Link** command) can also be shown as a report in simple text format. It is possible to print and save this report.

≫ To print and save a report

1   Open the node for the desired association in the tree view window for the documentation objects.

2   Select the desired documentation object.

3   Invoke the context menu and choose **Report Attributes of Link**.

A window such as the following appears.

4   Choose the desired command button:

Command Button	Description
Print	The **Print Setup** dialog box appears. Specify all required information (for example, a different printer or text orientation) and choose the **OK** button.
Save	The **Save Report** dialog box appears. Select the folder in which you want to store the report, specify a report name and choose the **Save** button.

5   To close the window in which the report is shown, choose the **OK** button.

10   Managing External Objects

Generating an External Object

This feature requires that the Schema Generation plug-in is installed and activated.

You can generate an external object from a documentation object.

>> **To generate an external object**

1   Select the documentation object for which you want to generate an external object.

    You can generate an external object from the following object types:

- DB2 databases
- dataspaces
- files of many different types
- programs of type database function and SQL procedure
- storagespaces
- verifications of type automatic

2   Invoke the context menu and choose **Generate**.

> **Note:** When the generation function is not available for the selected documentation object, the **Generate** command is disabled.

    Adabas files and DB2 tables/views only:
    When you have selected an Adabas file or a DB2 table or view, a dialog box appears in which you have to select the external object type. Example for an Adabas file:

    Select the desired type for the external object from the drop-down list box and choose the **OK** button.

The schema generation wizard appears. See the documentation for the Schema Generation plug-in for general information on how to use the wizard.

> **Note:** Since you have already selected a documentation object, the first page of the wizard which is described in the Schema Generation documentation does not appear

when being invoked from Object Description. In addition, the **New Start** button which is normally shown on the last page of the wizard is not available when being invoked from Object Description.

3   Specify all required options. If available choose the **Next** button to proceed to the next page.

For detailed information on the object type-specific information that can be specified using this wizard, see *Generation of External Objects* in *External Objects in Predict*.

4   If all required information has been specified, choose the **Finish** button to start generation.

When the generation process has completed, the last page of the wizard is shown. When the **List** option has been selected on a previous page of the wizard, a report is shown. If an error occurs during the generation process, an error report is shown.

Comparing a Documentation Object and an External Object

You can compare a documentation object and an external object in order to detect any inconsistencies.

≫ **To compare a documentation object and an external object**

1   Open the **External Objects** node containing the external object that you want to compare.
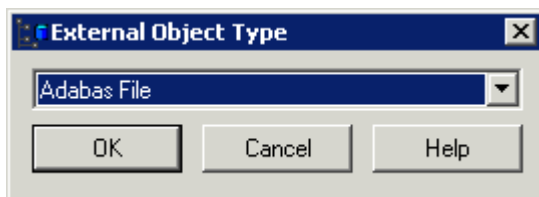
2   Select the external object.

3   Invoke the context menu and choose **Compare**.

> **Note:** When the comparison function is not available for the selected external object, the **Compare** command is disabled.

The resulting dialog box depends on the type of object that has been selected. Example for a DDM:
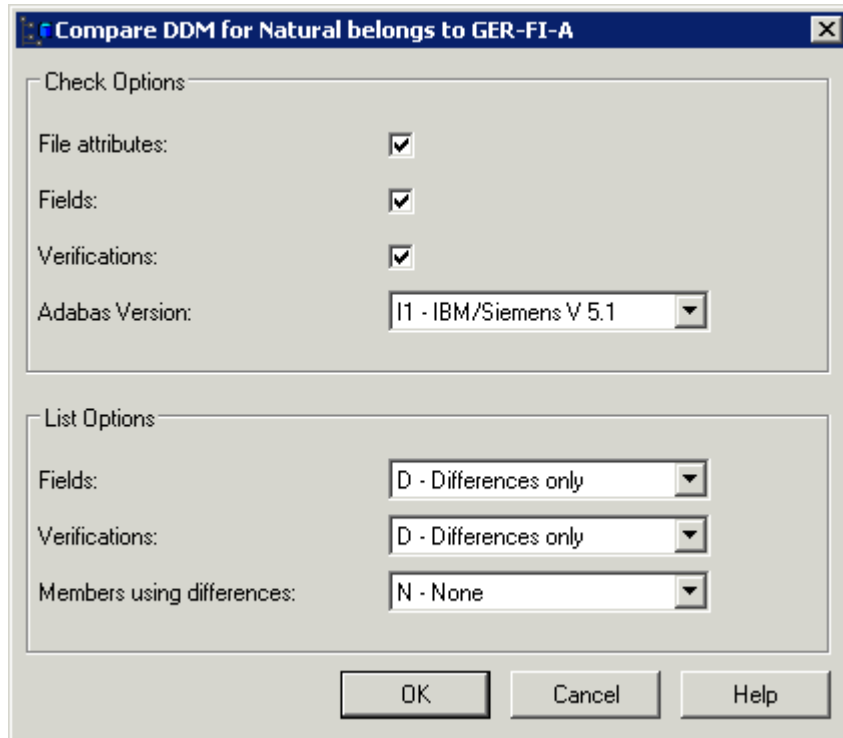
4   Specify all required options. See *Comparison* in *External Objects in Predict*.

5   Choose the **OK** button.

A report is shown. Example:
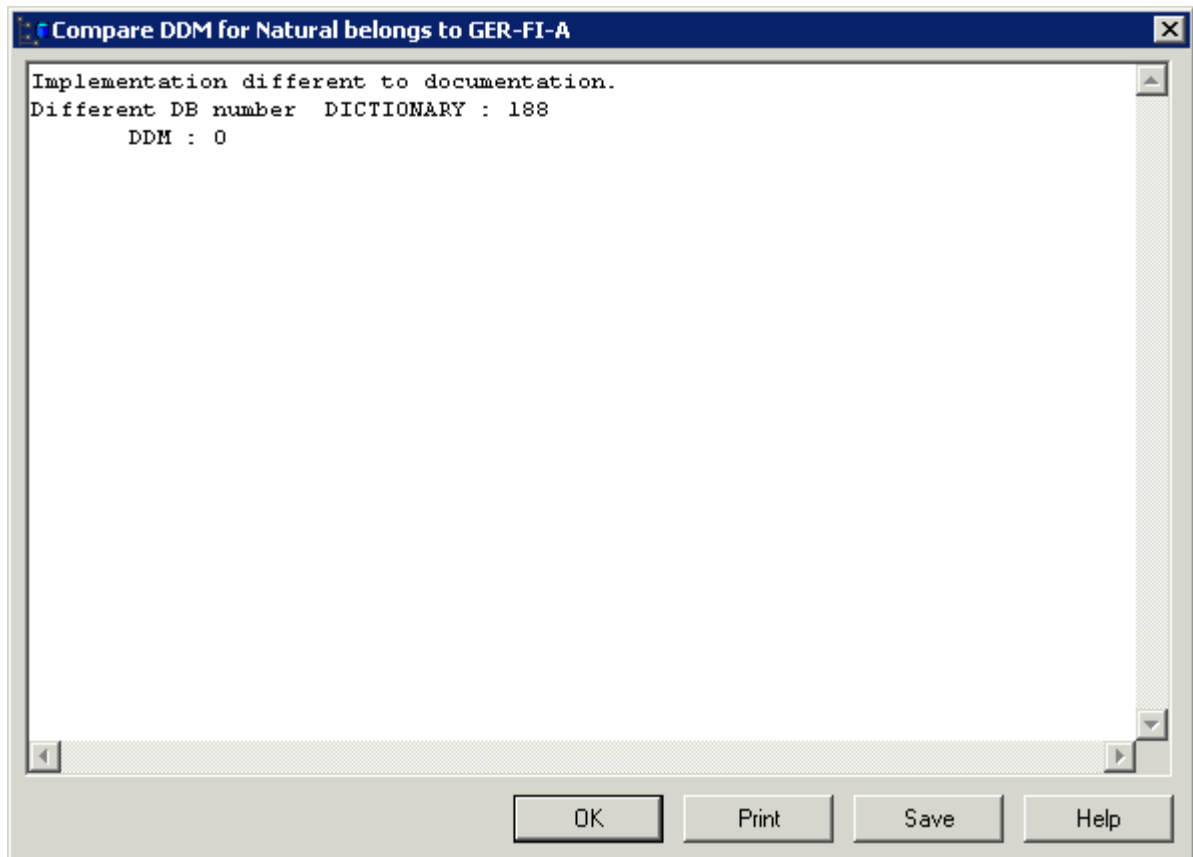
6   If you want to print or save the report, choose the corresponding command button. See
     Printing and Saving a Report for an External Object for further information on these command
     buttons.

7   To close the window in which the report is shown, choose the **OK** button.

Refreshing an External Object

You can refresh Adabas files and DB2 tables/views. When you refresh such an external object, you
delete all of its contents.

See *Administration of External Objects* in *External Objects in Predict*.

⊘   **Caution:** Do not confuse this type of refresh (this term is used with Adabas) with the refresh
     function in Windows which updates your display.

≫ **To refresh an external object**

1   Open the **External Objects** node containing the external object that you want to refresh.

> **Tip:** If you want to refresh several external objects at the same time, you have to open the list view window.

2   Select the external object(s).

3   Invoke the context menu and choose **Refresh External**.

> **Note:** When the refresh function is not available for the selected external object, the **Refresh External** command is disabled.

A dialog box appears asking whether you really want to refresh the object.

4   To refresh the current object, choose the **Yes** button.

Or:

To refresh all selected objects without further confirmation, choose the **Yes to All** button.

Disconnecting an External Object

When you disconnect an external object from its corresponding documentation objects, the implementation pointer from the documentation object to the external object is deleted, but the object itself remains intact.

See *Administration of External Objects* in *External Objects in Predict*.

≫ **To disconnect an external object**

1   Open the **External Objects** node containing the external object that you want to disconnect.

> **Tip:** If you want to disconnect several external objects at the same time, you have to open the list view window.

2   Select the external object(s).

3   Invoke the context menu and choose **Disconnect**.

A dialog box appears asking whether you really want to disconnect the object.

4   To disconnect the current object, choose the **Yes** button.

Or:

To disconnect all selected objects without further confirmation, choose the **Yes to All** button.

Disconnected external objects are no longer shown in the **External Objects** node.

Purging an External Object

You can purge external objects using the **Delete** command. When you purge an external object, it is disconnected and physically deleted.

See *Administration of External Objects* in *External Objects in Predict*.

≫ **To purge an external object**

1   Open the **External Objects** node containing the external object that you want to purge.

> 💡   **Tip:** If you want to purge several external objects at the same time, you have to open the list view window.

2   Select the external object(s).

3   Invoke the context menu and choose **Delete**.

A dialog box appears asking whether you really want to delete the object.

4   To confirm the deletion for the current object, choose the **Yes** button.

Or:

To delete all selected objects without further confirmation, choose the **Yes to All** button.

Printing and Saving a Report for an External Object

In contrast to the documentation objects, an **Open** or **Display** command is not available for external objects. However, information about an external object can be shown as a report in simple text format. It is possible to print and save this report.

≫ **To print and save a report**

1   Select the external object in the tree view window for the documentation objects or from a list view window showing the external objects.

2   Invoke the context menu and choose **Report**.

A window such as the following appears.

```
DDM for Natural belongs to CHD-A-FILE                    _ □ X

Name:                              DDM for Natural
Belongs to:                        CHD-A-FILE
Type:                              External Object

Added:                             2004-09-03 16:12


Implementation
    *          Generation started
    *          at 2004-09-03 16:12:04
    *          by user NATURAL
    *
    1  AA   ELE1                              A   11  N
    *          >>> Attention: Field has format  ' W' i  n    Adabas.
    1  AB   ELE2                              A   17  N
    1  AC   DATUM                             D    6  N
    1  AD   ZEIT                              T   12  N
    1  AE   BINAER                            B   17  N
    1  AF   SUPER-ELE1-ELE2                   A   28  N
    *          -------- SOURCE FIELD(S) -------
    *          ELE1(1-11)
    *          ELE2(1-17)
    1  AG   SUPER-BINAER                      B   11  N
    *          -------- SOURCE FIELD(S) -------
    *          BINAER(10-15)
    *          BINAER(3-7)

         OK        Print        Save        Help
```

3   Choose the desired command button:

Command Button	Description
Print	The **Print Setup** dialog box appears. Specify all required information (for example, a different printer or text orientation) and choose the **OK** button.
Save	The **Save Report** dialog box appears. Select the folder in which you want to store the report, specify a report name and choose the **Save** button.

4   To close the window in which the report is shown, choose the **OK** button.