

# Using Retrieval Options

This section covers the following topics:

- Overview of Retrieval Options
- Selection Criteria
- Restrictions
- Retrieval Type
- Output Mode
- Output Options
- Indicating which Objects are Implemented
- Displaying Information on the Implementation of Programs
- Using Restrictions and Output Options from Profiles

## Overview of Retrieval Options

The following retrieval options determine precisely which objects are to be included in a report and which information on these objects and on the associations of objects is to be output.

<b>Retrieval Options</b>	
Selection Criteria	Retrieval operations can be executed for single objects or for groups of objects. Selection criteria are used to specify the objects to be included in a report.
Retrieval Type	Determines the type of information to be retrieved from the dictionary. The standard retrieval types mainly differ with respect to the amount of information that is displayed. Standard retrieval types, for example Objects with no parent, can be applied to all object types. Type-specific retrieval types, for example Difference of files, can be applied to specific object types.
Output Mode	In addition to the retrieval type, an output mode must be specified. The output mode determines how information retrieved from the dictionary is output and whether objects can be selected for further processing. Retrieval type and output mode together determine the type of Retrieval operation, which is indicated in the header of reports. See Layout of Reports. Not all output modes are available for all retrieval types.
Output Options	In addition to the output mode, Output options can be set to determine which information, collected according to the retrieval type and selection criteria, is finally output. Output options can be specified for two types of object: <ul style="list-style-type: none"> <li>● Current objects. Included in a report because they meet the specified selection criteria.</li> <li>● Related objects. Included in a report because they are associated to a current object.</li> </ul>
Retrieval Models	Retrieval models can be used to specify exactly which part of the structure is to be evaluated.

## Selection Criteria

Retrieval operations can be executed for single objects, for a subset of objects and for all objects in the dictionary.

Any retrieval operation applies to all objects which meet given selection criteria. Selecting objects has up to three steps:

1. The first step when selecting objects is to fill the field Object ID (for example File ID) or to leave this field intentionally blank.
  - To select a **single object**, an Object ID must be specified without asterisk notation. Additional selection criteria are then ignored.
  - To select a **subset of all objects**, asterisk notation can be used (for example, by specifying ABRA\*, objects with IDs as ABRAHAM, ABRAKADABRA, etc. are included in the selection).
  - To select **all** objects, the field Object ID can be left blank (instead of entering an asterisk).
2. The selection can then be limited further by specifying object-specific additional selection criteria. See Type-Dependent Selection Criteria below.  
A general option for additional selection criteria is the parameter *default passive association*, for example *Belongs to VM* or *Contained in DA*. Only objects that are associated as a child to the given object are included in a report (asterisk notation is possible).
3. In the last step the selection can again be limited by specifying Restrictions.

## Type-Dependent Selection Criteria

Depending on the type of object additional selection criteria can be specified.

Parameter	Applicable to
object of type	Applicable to different object types. Only objects with the given subtype are included in the selection. For example: a file of type A (Adabas C file).
default passive association	Applicable to different object types. Only objects linked as child objects to the given parent object are included in the report.
Database number	Database
External name	File
File number	File
Synonyms	Field
Language	Program
Implementation pointer - Library - Member - User system Fnr - User system DBnr	Program
Implementation pointer - Library - User system Fnr - User system DBnr	System
Using file	File relation
User name	User
Verif. of status	Verification
Format	Verification

The meaning of the above selection parameters is described in detail in the retrieval sections of the documentation Predefined Object Types in Predict.

# Restrictions

Restrictions can either be specified temporarily by entering code T in the field Restrictions or they can be taken from a profile. See Using Restrictions and Output Options from Profiles. Temporary restrictions are lost when a session is terminated.

Restrictions are evaluated only for current objects.

Objects	Restrictions
Keywords	Up to five keywords can be specified. See Relating objects logically in the section <b>Predict Functionality</b> in the <b>Introduction to Predict documentation</b> and section <b>Keyword</b> in the <b>Predefined Object Types in Predict documentation</b> .
Owner	You can restrict the retrieval operation to objects that are assigned to a particular owner. See Relating objects logically in the section <b>Predict Functionality</b> in the <b>Introduction to Predict documentation</b> and section <b>User/Owner</b> in the <b>Predefined Object Types in Predict documentation</b> .
Extract	You can restrict the retrieval operation to objects that are contained in a specified extract. See the section <b>Extract</b> in the <b>Predefined Object Types in Predict documentation</b> .
String	You can restrict the retrieval operation to objects whose abstract, extended description, rules or ID contains the specified string.
Date	Retrieval operations can also be restricted by the parameter AND from date: only objects that were added or modified after a given date are evaluated. See the parameters described below.

```

13:50:03          ***** P R E D I C T  4.2.2  *****                2002-07-31
Plan    0          - (FI) Fil +Top-----Restrictions-----+
                                ! With keyword(s)                !
Retrieval Type              !                               !
                                !                               !
D  Files                    !                               !
E  Execute retrieval models !                               !
C  Dummy/Placeholder files  !                               !
A  Difference of files       ! combined by (AND/OR) OR      !
N  File number retrieval     ! AND with owner               !
                                !                               !
                                ! BUT NOT with keyword         !
Retrieval type ...          !                               !
Output mode .....* D Display ! AND included in extract      !
File ID ..... HNO-FI        !                               !
Contained in database ..... ! AND containing the string    !
External name ....          !                               !
Restrictions ....* T Temporary profi ! Scan options:                !
Output options ..* Profile HNO    ! Abstract N (Y,N) Rules ..... N (Y,N) !
                                ! Descr. N (Y,N) Object-ID . N (Y,N) !
Command ==>                ! Absolute Y (Y,N) Ignore case Y (Y,N) !
                                ! Command ==> +_____        !
                                +More-----+
    
```

```

13:50:03          ***** P R E D I C T  4.2.2  *****                2002-07-31
Plan    0          - (FI) Fil +More-----Restrictions-----+
                                ! AND from date (YYYY-MM-DD HH:II) !
Retrieval Type              ! 0000-00-00 00:00            !
                                !                               !
D  Files                    !                               !
E  Execute retrieval models !                               !
    
```

Parameters	
With keyword(s)	Only objects with the given keywords are included in the selection. Up to five keywords can be specified. Asterisk notation is possible.
combined by (AND/OR)	The keywords are combined in a boolean expression with AND or OR.
AND 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.
AND 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.
AND containing the string	<p>Only objects containing the given string in one or more of the following are included in the selection. - Abstract - Rules (only for verifications) - Extended description - Object ID</p> <p><b>Note:</b> Retrieval operations may be significantly slower when using a text string as selection criterion. For this reason it is not possible to define a default value for this parameter.</p>
Scan options	
Abstract	Y Abstract is to be scanned for the search string.
Rules	Y Rules are to be scanned for the search string. This parameters applies exclusively to verifications. With objects of other types, this input field is write protected.
Descr.	Y Extended descriptions are to be scanned for the search string.
Object ID	Y Objects will only be selected if the string occurs in the object ID.
Absolute	Y Embedded text strings are found (for example ring in strings).
	N Only occurrences of the search string that are delimited by a blank or special character are found.
Ignore case	Y The scan function will ignore upper and lower case (with ring specified, RiNg is found).
AND from date (YYYY-MM-DD HH:II)	<p>Only objects that were added or modified on or after this date will be selected.</p> <p>If a MODIFY date exists, this will be evaluated. If no MODIFY date exists for an object, the ADD date is evaluated.</p>

## Saving Restrictions for Later Use

Restrictions that have been specified for temporary use can be stored in your own profile (no matter which profile is currently active) with the command SAVE, STOW or CAT in the Command==> field of the Additional Restrictions window. Text strings specified with the AND containing the string parameter will not be stored.

A SAVE, STOW or CAT command issued by a user not defined in Predict with an object of type User is rejected.

## How the Use of Restrictions is Indicated

Once activated, restrictions apply to all subsequent retrieval operations until they are **explicitly deactivated**. The word empty behind the field Restrictions indicates that no restrictions are active.

## Deactivating Restrictions

Restrictions can be deactivated with code E (Empty restrictions) in the field Restrictions.

Whenever the result of a retrieval operation is smaller than expected, it is possible that restrictions of a previous retrieval operation are active.

## Using Restrictions from Profiles

See Using Restrictions and Output Options from Profiles.

## Retrieval Type

Retrieval type and output mode together determine the type of retrieval operation that is indicated in the header of reports. See Layout of Reports .

The retrieval type determines the type of information to be retrieved:

- Some retrieval types can be applied to most object types (including user-defined object types). These are called Standard retrieval types.  
Standard retrieval types mainly differ with respect to the amount of information that is displayed on the associations of objects.  
See Standard Retrieval Types for a detailed description of all type-independent retrieval types.
- Other retrieval types are type-specific, such as the retrieval type Difference of files contained in the File Retrieval menu below.  
Type-specific retrieval types are described in the respective sections of documentation Predefined Object Types in Predict.

```

13:13:33          ***** P R E D I C T 4.2.2 *****          2002-07-31
Plan    3          - (FI) File Retrieval -                      Profile HNO

Retrieval Type                Retrieval Type

D Files                        B Files with parents
E Execute retrieval models     O Files with no parent
C Dummy/Placeholder files      T Files with children
A Difference of files           U Files with no child
                                R Files related to a file

Retrieval type ...
Output mode .....*

File ID .....*                Files of type .....*
Contained in DA ..             File number .....*
External name ....
Restrictions .....*          Profile HNO,used        Model .....*
Output options ..*           Profile HNO              Association .....*

Command ==>
Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
      Help Next Stop Last LnkEl Flip Print Impl AdmFi SelFi Prof Main

```

## Restricting the Information on Related Objects

With retrieval types that report on the associations of objects, the parameter Association can be used to determine which types of related objects are to be included in the report.

For example: If Programs with children is executed with FI (*Uses FI concept.*) specified as Association, only programs which have children of type file via that association are listed.

The parameter Association applies to the following retrieval types:

T	Objects with children
B	Objects with parents
U	Objects with no child
O	Objects with no parent
C	Dummy/Placeholder objects

### Note:

For functions Objects with no child and Objects with no parent, the association can be an association code (FI, DA etc.), blank (all), or - for these two functions only - the value AY (any). See table Association for Objects with no child and Objects with no parent for the effect of these related types on the retrieval operation.

## Output Mode

An output mode must be specified in addition to the retrieval type. The following output modes are given:

- Display - Code D
- List - Code L
- Select - Code S
- Count - Code C
- Structured List - Code T
- Cross reference - Code X

### Output Modes Display, List, Select and Count

The output modes Display, List, Select and Count are used to retrieve information on individual objects.

<b>Display</b> - Code D	Displays extensive information on individual objects. The output options are used to determine what exactly is displayed.
<b>List</b> - Code L	Displays the following information in list form: <ul style="list-style-type: none"> <li>● one line of information per object</li> <li>● Abstracts The output option No. abstract lines determines how many abstract lines are displayed per object.</li> <li>● Asterisk marking implemented objects (optional) The output option Mark implementation determines whether implemented objects are marked.</li> </ul>
<b>Select</b> - Code S	The output mode Select can be used to select single objects for immediate processing or to select several objects for later processing using the workplan. See also Using the Workplan in the section Predict User Interface in the <b>Introduction to Predict documentation</b> .  The following information is displayed in list form: <ul style="list-style-type: none"> <li>● one line of information per object</li> <li>● Asterisk marking implemented objects (optional) The output option Mark implementation determines whether implemented objects are marked.</li> </ul>
<b>Count</b> - Code C	Used for Active Retrieval operations to count how many objects meet given selection criteria.

## The Output Mode Structured List - Code T

The output mode Structured list provides information on the structure of an application. The following rules apply:

- All objects directly or indirectly connected to an object along a predetermined search path are displayed in the form of a structured list.
- The connection can be either of the following:
  - A **Standard link** (predefined or user-defined association)
  - A **Special link**, for example Master Files and Userviews.
- The hierarchy of associations is displayed.
- Objects can be displayed more than once.
- The attributes of an association can be displayed.

See description of parameter Link in the section **Retrieval Model Administration** in the **Predict Administration documentation**.

See also Execute Retrieval Model.

### Sample Output with Structured list

The example below was created with the predefined retrieval model EX for a system.

```

13:56:24          ***** P R E D I C T 4.2.2 *****          2002-07-31
                    - Structured List for System -

System ID ..... DEMO-FLIGHT-BOOKING-SYSTEM
-----
01 SY Uses PR concept. .... * DEMO-FB-MENU
02 : PR uses PR concept. .... * DEMO-MAP
02 : PR uses PR concept. .... DEMO-FLIGHT-BOOKING
03 : : PR uses PR concept. .... DEMO-FB-DATA
03 : : PR uses PR concept. .... DEMO-FB-CHECK
04 : : : PR uses FI concept. .... * DEMO-FB-FLIGHT
05 : : : : FI Has direct views .... * DEMO-FLIGHT
05 : : : : FI Contained in DA ..... DEMO-FLIGHT-BOOKING
03 : : PR uses PR concept. .... DEMO-FB-STORE-DATA
04 : : : PR uses PR concept. .... DEMO-FB-UPD-FLIGHT
   : : : >>> object not documented <<<
03 : : PR uses PR concept. .... DEMO-FB-PRINT-TICKET
04 : : : PR uses FI concept. .... * DEMO-FB-FLIGHT-BOOKING
05 : : : : FI Contained in DA ..... DEMO-FLIGHT-BOOKING
04 : : : PR uses FI concept. .... * DEMO-FB-FLIGHT
Command ==>>          Scroll ==> CSR
Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10---PF11---PF12---
                Quit          RFind Flip - +          Left Right

```

## The Output Mode Cross Reference - Code X

The following rules apply:

- All objects that are directly or indirectly connected to an object are listed.
- The connection can be either of the following:
  - A **Standard link** (predefined or user-defined association)
  - A **Special link**, for example master files and userviews.
- The hierarchy of associations is **not** displayed.
- Each object is shown only once.

See description of parameter Link in the section **Retrieval Model Administration** in the **Predict Administration documentation**.

See also Execute Retrieval Model.

### Sample output with Cross Reference

The example below was created with the predefined retrieval model EX for a system.

```

13:55:15          ***** P R E D I C T  4.2.2  *****          2002-07-31
                   - Cross Reference for System -

System ID ..... DEMO-FLIGHT-BOOKING-SYSTEM
-----
Database ID ..... DEMO-FLIGHT-BOOKING
File ID ..... * DEMO-FB-FLIGHT
                * DEMO-FB-FLIGHT-BOOKING
                * DEMO-FLIGHT
Program ID ..... DEMO-FB-CANCEL
                DEMO-FB-CHANGE
                DEMO-FB-CHECK
                DEMO-FB-DATA
                * DEMO-FB-MENU
                DEMO-FB-PRINT-MASK
                DEMO-FB-PRINT-TICKET
                DEMO-FB-STORE-DATA
                DEMO-FB-UPD-FLIGHT
                >>> Object not documented <<<
                DEMO-FI-MENU

Command ==>
Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10---PF11---PF12---
                Quit          RFind Flip  -      +          Left  Right

```

## Output Options

The amount of information contained in a report can be determined with Output options and parameters of a Retrieval model.

- The contents of a report created with the output mode Display are determined with output options. A small subset of output options also applies to the output modes List, Select and Cross Reference.
- The contents of a report created with retrieval type Execute retrieval model (output mode Structured List or Cross Reference) are basically determined with parameters of the retrieval model. On the basis of these settings, the contents of such a report can then be restricted with the output options described below.

Output options can be read from profiles (see Using Restrictions and Output Options from Profiles) or specified in a window (see screen below) for temporary use.

```

13:13:29          ***** P R E D I C T  4.2.2  *****                2002-07-31
Plan    3          - (SY) System Retrieval -                            Profile HNO

Retrieval Type          +All-----Output options-----+
                        !               current   related!
D Systems              ! Description ..... Y (Y,N)  Y   !
E Execute retrieval models ! No. abstract lines  0 (0-16) 0   !
C Dummy/Placeholder systems ! Keywords .....    20 (0-32) 20  !
                        ! Extracts .....    32 (0-32) 32  !
                        ! Owners .....    35 (0-99) 39  !
                        !   with users .....* Y           Y   !
Retrieval type ...     ! Attributes .....   Y (Y,N)  N   !
Output mode .....*    ! Dummy/Placeholder * D           Y   !
                        !                               !
System ID .....       ! Association attr. ....* Y         !
Library .....         ! Mark implementation .... Y (Y,N)  !
                        ! Show implementation .... Y (Y,N)  !
                        ! Display modifier ..... Y (Y,N)  !
Restrictions .....*   Profile HNO,used ! Use CON-FORM .....   N (Y,N)  !
Output options ..* T Profile HNO      ! Connecting character ... ?         !
Command ==>          ! Cover page .....     N (Y,N)  !
                        ! Page size .....     25           !
                        !Command ==>  _____ !
                        +-----+
    
```

Not all output options apply to all retrieval types. Output option Attributes, for example, does not apply to the retrieval type Dummy/Placeholder objects.

Output options are object type dependent. The cover page of a retrieval report indicates which output options are active for that retrieval operation (see parameter Cover page). You will also find an overview of the valid output options for the individual retrieval operations at the end of each section in the documentation Predefined Object Types in Predict.

### Saving Output Options for Later Use

```

13:13:45          ***** P R E D I C T  4.2.2  *****                2002-07-31
Plan    3          - (SY) System Retrieval -                            Profile HNO

Retrieval Type          +All----Output options-----+
                        Retri ! _ U   Your profile         !
                        ! _ A   Active profile         !
D Systems              B Sy ! _ D   Profile Default         !
E Execute retrieval models O Sy ! _ T   Temporary profile         !
C Dummy/Placeholder systems T Sy ! _ ' ' Confirm current         !
                        U Sy !      profile and execute         !
                        !      function                 !
Retrieval type ...     !                               !
Output mode .....*    !                               !
                        !                               !
System ID .....       !                               !
Library .....         !                               !
                        !                               !
Restrictions .....*   Profile HNO,used !                               !
Output options ..* * Profile HNO      !                               !
Command ==>          !                               !
                        !Command ==>  _____ !
                        +-----+
    
```

Output options that have been specified for temporary use can be stored in profiles with the command SAVE, STOW or CAT in the Command==> field of the Output options window.

Output options are stored in your own profile, irrespective of which profile is currently active.

A SAVE, STOW or CAT command issued by a user not defined in Predict with an object of type User is rejected.

## General Rules Applying to Output Options

- Many output options can be applied both to objects that meet the specified selection criteria (the current objects) and to objects that are included in a report as children or parents of these objects (the related objects).
- Output options for related objects are applicable to retrieval types that report on attributes of related objects:

B	Objects with parents
T	Objects with children
C	Dummy/Placeholder objects (output mode Display)
E	Execute retrieval model
X	Cross reference objects (applicable to extracts, keywords and owners)

- Changing an output option has no effect if a retrieval operation does not retrieve the information to which the option refers.

For example, if you use Execute retrieval model with a retrieval model that does not report on keywords, changing the parameter Keywords in the output option has no effect.

## Output Options Valid For All Objects

Output Options valid for all Objects	
Description	<b>Y</b> Display extended description of an object.
No. abstract lines	Number of abstract lines to be displayed.
Keywords	Number of keywords to be displayed.
Extracts	Number of extracts to be displayed.
Owners	Number of owners to be displayed.
with users	Determines, if users assigned to the owners are displayed.  <b>Y</b> All users assigned to an owner are displayed.  <b>S</b> If only one user is assigned to the owner, the user is displayed. If more than one user is assigned, >>> multiple <<< is displayed.  <b>N</b> Users assigned to an owner will not be displayed.

Attributes	<p><b>Y</b> Display attributes of objects.</p> <p><b>Note:</b> The display of Adabas attributes of Files and Adabas sizes of Databases is controlled using type-specific output options. For further information see Type-specific Output Options.</p>
Dummy/Placeholder, related objects	<p>Applicable to the following functions</p> <ul style="list-style-type: none"> <li>● Objects with children (code T) with output mode List</li> <li>● Execute retrieval model (code E) with output mode Structured List</li> </ul> <p><b>N</b> Only documented objects are displayed.</p> <p><b>Y</b> Dummies/placeholders and documented objects are displayed.</p> <p><b>D</b> Only dummies are displayed.</p> <p><b>P</b> Only placeholders are displayed.</p>
Dummy/Placeholder, current objects	<p>Applicable to function Dummy/Placeholder objects (code C):</p> <p><b>D</b> Only dummies are displayed.</p> <p><b>P</b> Only placeholders are displayed.</p>
Association attr.	<p><b>Y</b> All attributes of associations between objects are displayed.</p> <p><b>S</b> Short. Only attributes that appear in the respective link list are displayed.</p> <p><b>N</b> No attributes of associations are displayed.</p>
Mark implementation	<p><b>Y</b> Implemented objects are to be marked with an asterisk (*).</p> <p>Applicable to files, databases, systems, storagespaces, programs, verifications, dataspace.</p> <p>See Indicating which Objects are Implemented for a description of when an object is regarded as implemented.</p>
Show implementation	<p><b>Y</b> Display the implementation.</p> <p>Applicable to files, databases, storagespaces, systems, programs, dataspace.</p>

Display modifier	<p>If not deactivated in the general defaults, Predict remembers who created or changed an object.</p> <p><b>Y</b> The last user who changed an object is displayed when retrieving information on objects or maintaining objects.</p> <p>See the description of the parameter Modification Log in the section Maintenance Options of section <b>Defaults</b> in the <b>Predict Administration documentation</b>.</p>
Connecting character	<p>Character that is used to connect output lines on the same level when creating a report with retrieval type Execute retrieval model and output mode Structured list.</p> <p>The Connecting character is also used in the display of Owners/Users and condition names/values.</p>
Cover page	<p><b>Y</b> Introduce reports with a cover page.</p> <p>The cover page contains a list of all output options and selection criteria that were applied when creating the report. If a retrieval model was used the model is displayed.</p>
Page size	<p>This parameter defines the maximum number of lines to be displayed on each logical page. If set to zero, the system default value for the user's current online terminal is substituted.</p> <p><b>Note:</b> Not applicable in batch mode.</p> <p><b>Note:</b> Page size is only applicable when printing or if general default parameter "Use SAG Editor for output" is set to Y.</p>
User Exit	<p><b>N</b> Deactivates the user exit U-DSP that can be called after retrieval operations.</p> <p>The parameter is only displayed if Retrieval / after display in the Activate user exits screen of the function Defaults is set to O. See the section Defaults in the <b>Predict Administration documentation</b>.</p>

Use Conform	<p><b>Y</b>                  Con-form formatting instructions are interpreted in extended descriptions.                  This parameter can only be set to Y if the Con-form text formatting facility is installed.</p> <p><b>Note:</b>                  In an IBM environment, the size of the Con-form buffer area is determined by the Natural parameter CSIZE. For details of this parameter, see the section <b>Natural Profile Parameters</b> in the <b>Natural Operations documentation</b>.</p> <p><b>Note:</b>                  The following parameters only apply if Con-form is installed and parameter Use Con-form is set to Y. They apply whenever the extended description of an object is output by either the DISPLAY command of the description editor or the Display function of a retrieval menu.</p>	
	Predict header	<p><b>Y</b>                  The usual Predict header, including the current date,time, and page number, appears at the top of every page.</p> <p><b>N</b>                  The Predict header is omitted from the top of every page. However, a Con-form page title command with a number sign (#) can still be used to number the pages.                  See also Extended Description Skeleton in the section <b>Defaults</b> in the <b>Predict Administration documentation</b>.</p>
	Use FPROFILE	<p><b>Y</b>                  The Con-form formatting profile (FPROFILE) is inserted whenever an extended description is output. Default values for a page header, page size, line size and Con-form macros can be stored in FPROFILE.</p>
	List error messages	<p><b>Y</b>                  Con-form error messages are displayed with the description.</p>

## Type-specific Output Options

The following type-dependent output options can be specified in subsequent screens after Y has been entered in the field MORE Type dependent options and an object type has been entered in the selection window that is then displayed.

Additional Output Options for File	
Adabas attributes	<p><b>Y</b>                  Adabas attributes are shown in detail.</p> <p><b>S</b>                  A summary of Adabas attributes is given.</p> <p><b>N</b>                  No Adabas attributes are shown.</p>
Vista elements	<p><b>Y</b>                  Entries for files in Vista tables are displayed.</p>
Subquery	<p><b>Y</b>                  Display subqueries.</p>

Trigger	<b>Y</b> Display triggers linked to files via <i>Triggers FI</i> .
Check expression	<b>Y</b> Display check expressions.
Linked verification	<b>Y</b> Verifications linked to fields via <i>Verifies EL</i> are displayed.  Triggers linked to fields via <i>Triggers EL</i> are displayed.  Applicable to the retrieval type Files with children, association EL or blank ( ' ') with output mode Display.
Generation layout	<b>Y</b> The generation layout of the file is displayed.  Applicable when executing the retrieval type Files with children (code T) for association has fields. The output options Adabas version, Language, Alignment/sync., Position/Offset, Counter length, Compiler and Replace with synonym specify in detail how a record layout is displayed.
Adabas version	When listing a record buffer structure of an Adabas file or userview, the Adabas version for which the buffers are applicable. Valid values:  <b>I1</b> V5.1 for IBM/Siemens <b>R1</b> Similar to I1, sub/superdescriptors are included physically in the record buffer layout. <b>I3</b> V5.3 for IBM/Siemens <b>R3</b> Similar to I3, sub/superdescriptors are included physically in the record buffer layout. <b>I7</b> V7.1 for IBM/Siemens <b>R7</b> Similar to I7, sub/super and collation descriptors are included physically in the record buffer layout. <b>O4</b> V4.1 for IBM/Siemens <b>U1</b> V1.1 for UNIX <b>U2</b> V1.2 for UNIX <b>U5</b> V3.1 for UNIX/Windows NT <b>V2</b> V2.1 for VMS <b>V3</b> V3.1 for VMS <b>V4</b> V3.2 for VMS <b>V5</b> V4.1 for VMS

Language	<p>Display record layout for the specified language:</p> <p><b>CO</b> COBOL</p> <p><b>BA</b> Assembler (BAL)</p> <p><b>PL</b> PL/I</p> <p><b>FO</b> FORTRAN</p> <p><b>CC</b> Language C</p>
Alignment/Sync	<p><b>N</b> Fields will not be aligned</p> <p><b>Y</b> All appropriate fields are aligned.</p> <p><b>S</b> Only fields with the attribute 'Synchronized' in the corresponding Predict entries are aligned.</p>
Position/Offset	<p><b>P</b> Display absolute position of field in record.</p> <p><b>O</b> Display offset of the field.</p>
Counter length	<p>Applicable to Assembler copy code: the length of additional counter fields. Possible values: 1,2.</p>
Compiler	<p>For language FORTRAN:</p> <p><b>I</b> IBM</p> <p><b>S</b> SIEMENS</p> <p><b>V</b> VMS</p> <p><b>7</b> FORTRAN 77 Standard</p> <p>For language COBOL:</p> <p><b>7</b> COBOL 74</p> <p><b>8</b> COBOL 85</p> <p><b>W</b> WANG COBOL</p>
Replace with syn.	<p><b>Y</b> If a synonym name exists for the generated language, the field name will be replaced by the synonym name.</p> <p><b>N</b> The field name will not be replaced by a synonym name.</p>

<b>Additional Output Options for Field</b>	
Composed fields	<b>Y</b> Display names of fields hyper/super/subfields are derived from when fields of these types are displayed.
3GL specification	<b>Y</b> The following 3GL-specific attributes of fields are displayed:  Gr.structur, Justify, Synchronized, Init. value, Indexed by, Depending on, Condition name and Condition value.
DV-field expression	<b>Y</b> Derived field expressions are displayed.
Natural options	<b>Y</b> Up to three headers and the definition of the Natural edit mask are displayed.
Sorted by field	<b>Y</b> Field list is sorted alphabetically by field.  <b>N</b> Fields are sorted by file. Fields appear in the order they are defined in the file.  For a detailed description of this parameter see Sorting Fields and Files in the section <b>Field</b> in the <b>Predefined Object Types in Predict documentation</b> .  <b>Note:</b> This output option is also available for verifications.
Synonyms	Display language-specific synonyms of field IDs.  # Display synonyms for all languages.  * A selection window for language code appears.
Display length	Format in which the length of fields is displayed:  <b>N</b> Natural Format  <b>P</b> Physical Format

<b>Additional Output Option for Database</b>	
Adabas sizes	<b>Y</b> Display physical size assigned to a database.

<b>Additional Output Options for Programs</b>	
Entry points	<b>Y</b> Entry points are displayed.
Procedure code	<b>Y</b> Display procedure code.

<b>Additional Output Option for Verification</b>	
Rules	<b>Y</b> Display rules of a verification.
Sorted by field	<b>Y</b> Field list is sorted alphabetically by field.  <b>N</b> Fields are sorted by file. Fields appear in the order they are defined in the file.  Applicable to the retrieval type Verifications with parents, association EL or blank ( ' ').  <b>Note:</b> The default value for this option is specified as type-specific option for field.

## Indicating which Objects are Implemented

If the output option Mark implementation is set to Y , objects that are implemented are marked with an asterisk.

The implementation of objects can be indicated for the following object types. What is meant by implemented depends on the object type.

- The following **databases** are regarded as implemented:
  - type A and connected to a physical Adabas C database,
  - type D and connected to a physical DB2 database,
  - type P with a DBnr defined in the NTDB macro as an Entire System Server database,
  - type I.
- A **dataspace** is regarded as implemented if a DB2 tablespace or SQL/DS DBspace has been generated from the Predict dataspace.
- A **file** is regarded as implemented if
  - any kind of Copy Code has been generated for a file or
  - the file is connected to an external object.
- A **program** is regarded as implemented if XRef data exists.
- A **storagespace** is regarded as implemented if a DB2 storagegroup has been generated from the Predict Storagespace.
- A **system** is regarded as implemented if XRef data exists for a program in the library documented by the System.
- A **verification** is regarded as implemented if the rule of the verification is used in a map and XRef data exists.

## Displaying Information on the Implementation of Programs

If the Show implementation parameter is set to Y, information on the implementation of an object contained in the XRef data is displayed: If several implemented objects exist in different libraries, these are listed.

Documentation data and corresponding XRef data are identified with the implementation pointer.

The following screen contains implementation information on a program.

```

13:47:03          ***** P R E D I C T 4.2.2 *****          2002-07-31
                        - Display Program -

Program ID ..... HNO-PR
Type ..... Program          Added 2002-07-31 at 08:30 by HNO
                               Modified 2002-07-31 at 09:32 by HNO
-----

Program attributes
  Language .. Natural
  Mode ..... (none)

Implementation pointer
  Member .... ARH1          Library .. ARH2          Fnr ..          DBnr ..
  NAT-Func ..
  Load Lib ..

----- Implementation -----
Member   Library  Fnr   DBnr  Type  Cat-user  Cat-tid  Cat-date  Cat-time
ARH1     ARH2      54    180   P     ARH       DAEDC438 2002-07-31 09:08:32
Command ==>
Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
                Quit          RFind Flip -      +          Left Right
                                           line 1 of 18 (line 8 on screen)

```

## Using Restrictions and Output Options from Profiles

```

13:49:58          ***** P R E D I C T 4.2.2 *****          2002-07-31
Plan   3          - (FI) File Retrieval -          Profile HNO
                                     +All-----Restrictions-----+
Retrieval Type          Retri ! _ U   Your profile          !
                                     ! _ A   Active profile          !
D Files          B Fi ! _ D   Profile Default          !
E Execute retrieval models O Fi ! _ T   Temporary profile          !
C Dummy/Placeholder files T Fi ! _ E   Empty restrictions          !
A Difference of files U Fi ! _ ' '   Confirm current          !
                                     R Fi !          profile and execute          !
                                     !          function          !
Retrieval type ...          !          !
Output mode .....* D Display          !          !
                                     !          !
File ID .....          !          !
Contained in DA ..          !          !
External name ....          !          !
Restrictions .....* * Profile HNO,used          !          !
Output options ..* Profile HNO          !          !
                                     !          !
Command ==>          !          !
                                     !Command ==> _____          !
                                     +-----+

```

Restrictions and output options can be stored in profiles. To use restrictions/output options of a profile, the profile does not necessarily have to be active as the current session profile. The following options are possible:

Your profile	Use restrictions/output options in the profile of the current user.
Active profile	Use the restrictions/output options of the profile that is currently active. The active profile is indicated in the upper right corner the screen (in the field Profile).
Profile default	Use the restrictions/output options of the Predict default profile with code D (Profile default).
Temporary profile	Use temporary restrictions/output options. The Restrictions window is then displayed containing the values of the current profile. The values can be overwritten for use in the current session.
Empty restrictions	Deactivate restrictions.

To use the restriction profile of another user, the profile of that user has to be activated with the command `PROFILE user-ID`.