Data Browser

The data browser is used to generate data reports from Natural DDMs (data definition module) created from an Adabas, XML or SQL database available in your current Natural environment. You can select the DDM fields to be included in the report and specify filter criteria.

The data reports generated can be displayed in either the **Results** window of Natural Studio or in a text file downloaded to the PC. From the **Results** window, you can select records for printing or for saving as text files. You can generate one or more reports, where each report comprises a separate tabbed page of the **Results** window.

The *Data Browser* documentation covers the following topics:

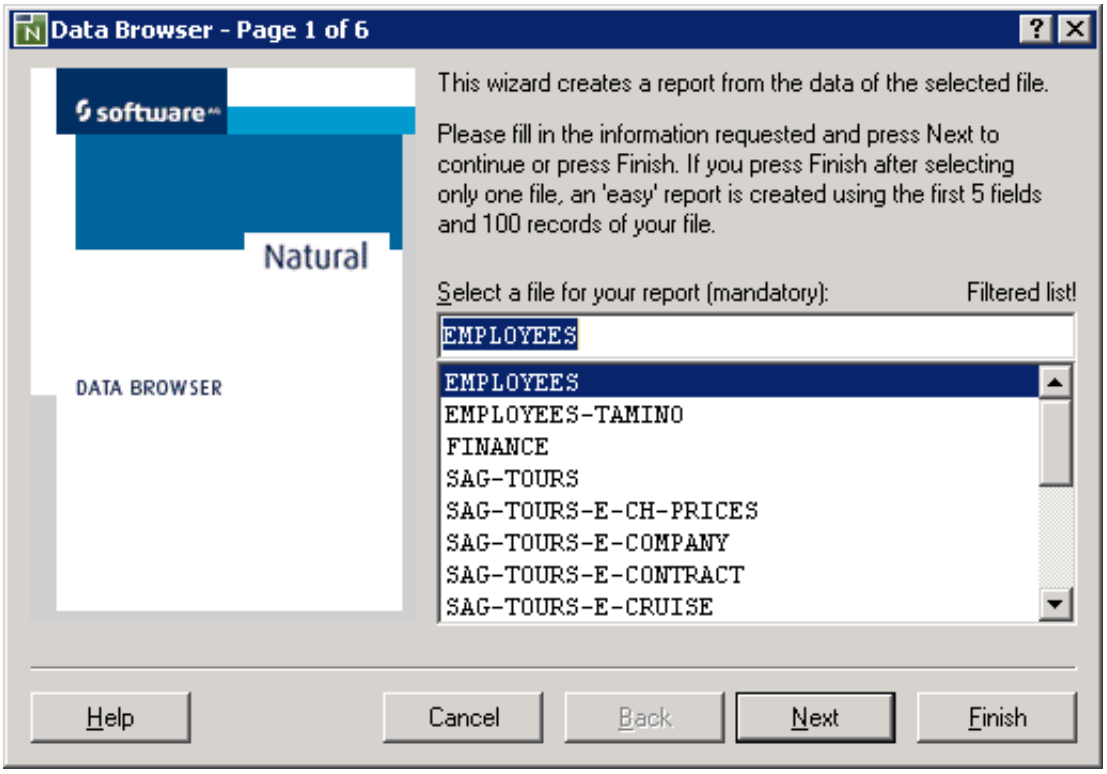
- Navigation
- File Selection List
- Field Selection
- Output Report Fields
- Filter Criteria
- Report Options
- Summary
- Field Properties
- Results Window

Navigation

Help	Activates the Natural Help system and leads to this chapter.
Cancel	Closes the dialog box without making any changes.
Back	Displays the previous page in the data browser.
Next	Displays the next page in the data browser.
Finish	Ends the report definition, generates the database request and displays the report layout in the **Results** window.

File Selection List

The file selection list displays all cataloged DDMs created from an Adabas file, an SQL table or an XML doctype which are available in the current Natural environment:



In a local Windows environment or in a remote Windows, UNIX or OpenVMS environment, the DDMs are contained in the current Natural library and concatenated steplibs (if defined) in the current FNAT or FUSER system file.

If the FDDM option is set in a local Windows environment or in a remote Windows, UNIX or OpenVMS environment, the DDMs are contained in the FDDM system file.

In a remote mainframe environment, the DDMs are contained in the current FDIC system file.

This section provides information on the following:

- Natural Studio Filter
- Context Menu
- DDM Selection

Natural Studio Filter

A filter that has been defined and activated with the corresponding Natural Studio function (see also *Filtering Libraries and Objects* in the *Natural Studio* documentation), by default, also applies to the data browser. Therefore, if a filter is used for the current library, concatenated steplibs or the system file, the selection list contains a reduced number of DDMs.

Exceptions

The data browser ignores a filter that contains any of the following definitions:

- In a remote Windows, mainframe, UNIX or OpenVMS environment, a filter that contains a name range (-).
- In a local Windows environment, a filter that contains a name range (-) combined with a wildcard (* or ?).

An active filter is indicated by the message `Filtered list!`, which appears above the selection list as shown in the example screen above. The data browser ignores an active filter if you select **Show Unfiltered List** from the context menu. If selected, the message `Unfiltered list!` appears above the selection list and the selection list contains all DDMs available in the current Natural environment.

Context Menu

The context menu for the file selection list on **Page 1** provides the following functions:

Show Unfiltered List	Deactivates or activates the Natural Studio filter as described above.
List DDMs with Database Types	Indicates the type of database (Adabas, XML or SQL) from which the DDMs were created.
List DDMs with Database IDs and File Numbers	Indicates the database IDs (DBID) and file numbers (FNR) where the DDMs are stored.

DDM Selection

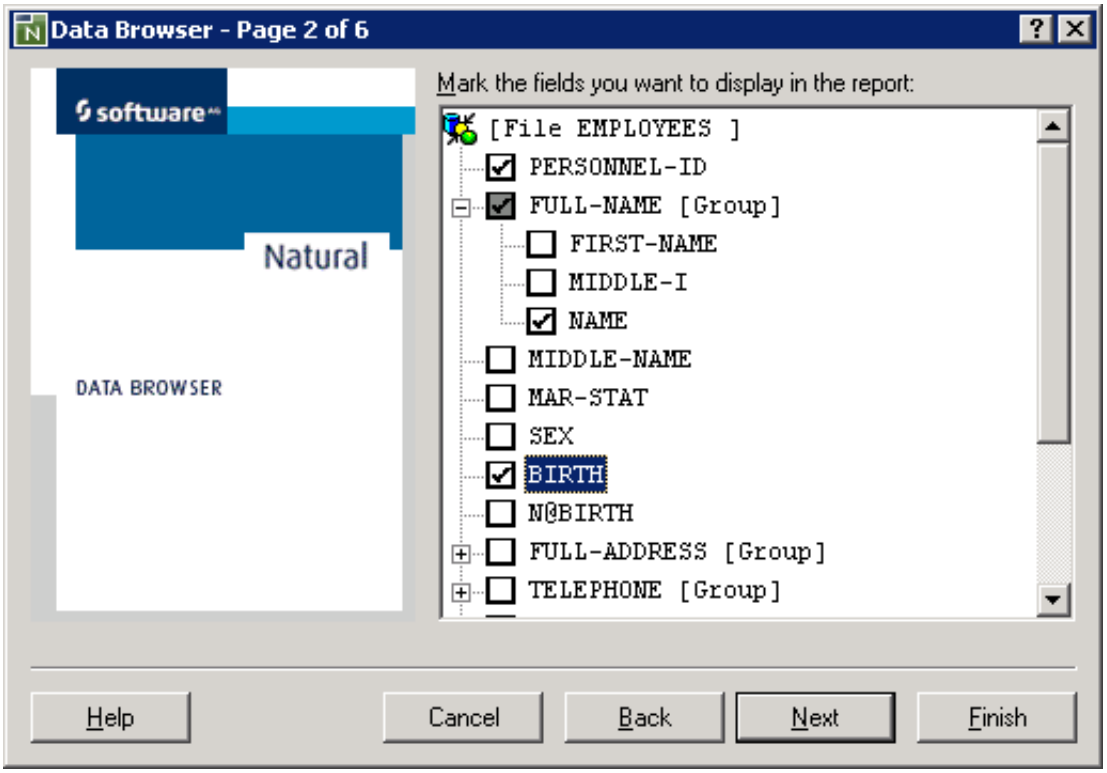
The selection of a DDM is mandatory. After selecting a DDM from the selection list, a check is performed whether the appropriate database is available.

If this is not the case, the DDM check will report the reason for the error, usually a database response code. Based on this information, the user can take measures to correct the error and restart the database.

After DDM selection, you can choose **Next** to go to the next data browser page where you can specify field selection criteria, or you can choose **Finish** to immediately generate the data report. If you choose **Finish**, the data browser creates an "easy" report that outputs the first 100 records of the selected DDM with the first 5 fields of the record. As soon as you specify any field selection or filter criteria on one of the following pages of the data browser, the "easy" report is replaced by an individual report.

Field Selection

All fields of the selected DDM are displayed in a tree view similar to the example shown below:



Groups are collapsed and can be expanded by clicking on them. Every item in the tree view has a check box. The fields that are selected here are taken over into the list of output fields. If groups are selected, all individual fields and subgroups that belong to them are automatically selected too. If in a group, because of manual intervention, not all fields are selected, the check box with the check mark is grayed out for the corresponding group name (in the example above, `FULL-NAME`). A cleared check box causes the field or fields of a group to be removed from the output list.

This section provides information on the following:

- Context Menu

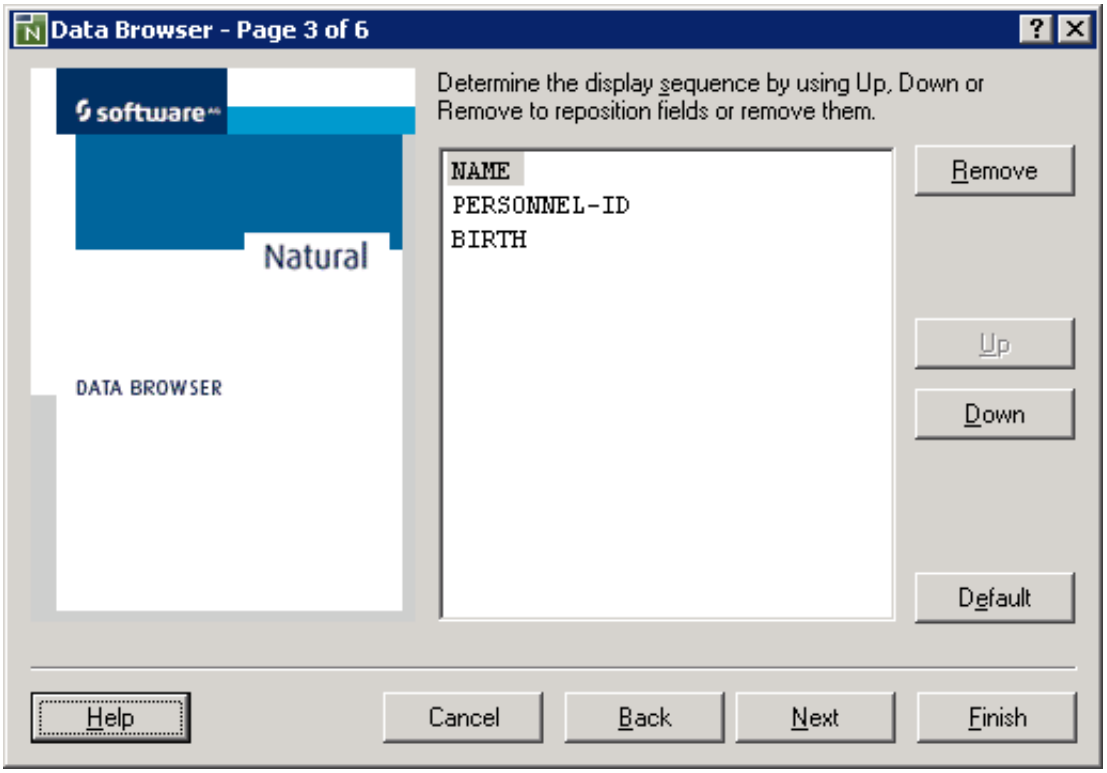
Context Menu

The context menu of the tree view on **Page 2** provides the following functions:

Expand All	Expands all group fields of the DDM.
Collapse All	Collapses all group fields of the DDM.
Select All	Selects all fields of the DDM.
Deselect All	Deselects all fields of the DDM.
Properties	Opens a pop-up window containing properties of the selected field. (For more information, refer to *Field Properties*). Or, if the DDM name is selected, the file properties show the DBID (database ID), the file number and the database type (Adabas, SQL or XML).

Output Report Fields

All individual fields that were selected in the tree view are listed on **Page 3** as shown in the following example:



For a field that has been defined as an array, the list indicates the dimension(s) of this array.

The sequence in which the fields appear in the list corresponds to the sequence in the report (from left to right).

The buttons **Up** und **Down** are provided for modifying the output sequence. They move the corresponding selected field one position up or down.

Using **Remove**, the selected field can be deleted from the report list.

With the **Default** button, the output sequence corresponding to the DDM structure is recreated.

If no fields were selected in the tree view, this page is skipped and per default the first 5 fields of the DDM are used for the report output.

This section provides information on the following:

- Context Menu

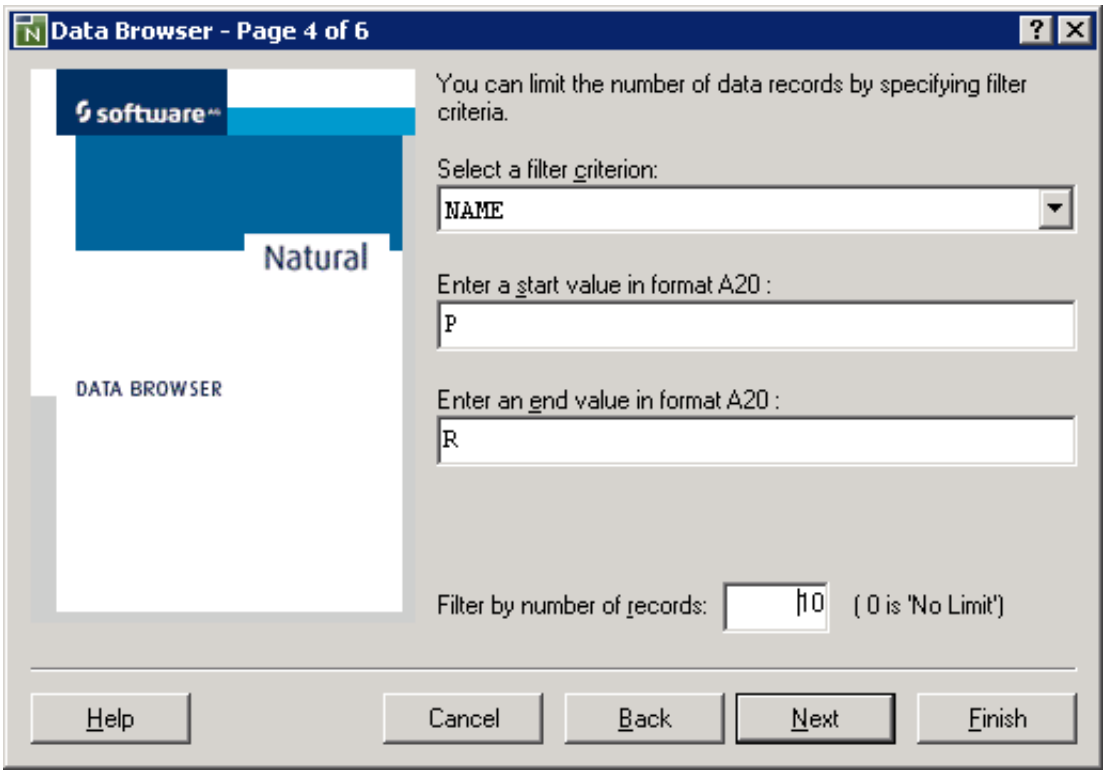
Context Menu

The context menu of the output sequence on **Page 3** provides the following functions:

Position Top	Positions the selected field at the top of the field list.
Position Bottom	Positions the selected field at the bottom of the field list.
Properties	Opens a pop-up window containing properties of the selected field. (For more information, refer to *Field Properties*).

Filter Criteria

Page 4 of the data browser provides the option to specify filter criteria similar to the example shown below:



A report can be generated unfiltered in that the records are read as they stand physically in the file (physical read). This is the default.

The range of values of the descriptor field can be defined by a start value and, additionally, by an end value. An end value can be applied only if a start value exists and the start value must be less than the end value. The appropriate value format is shown on the label of the start/end value box.

For a date field, you can enter a start/end date in the Natural format `D` (see the *Programming Guide*) according to the example date indicated on the box label where `YYYY` represents the year, `MM` the month and `DD` the day. Note that the format in which the date has to be entered also depends on the setting of the profile parameter `DTFORM` (see the *Parameter Reference* documentation).

For a time field, you can enter a start/end time in the Natural format `T` or in the extended format `T` according to the example date/time indicated on the box label where `HH:II:SS` represents the time (`HH` = hour, `II` = minutes, `SS` = seconds), `YYYY` the year, `MM` the month and `DD` the day. Note that the format in which the date has to be entered also depends on the setting of the profile parameter `DTFORM` (see the *Parameter Reference* documentation). In addition, consider the format used when storing the fields in your database system.

All filter criteria can be further limited by entering an absolute record limit (the default setting is 100 records). Independent of any filter criteria, only the corresponding number of records is written in the result list (report). By entering `0` (zero), the record limit is switched off.

Caution:
A large number of records can result in a long response time for data retrieval from the database. Therefore, if you switch the record limit off (value set to `0`) or if you specify a value greater than 1000, a message will warn you of a possible delay in generating the result list.

This section provides information on the following:

- Context Menu

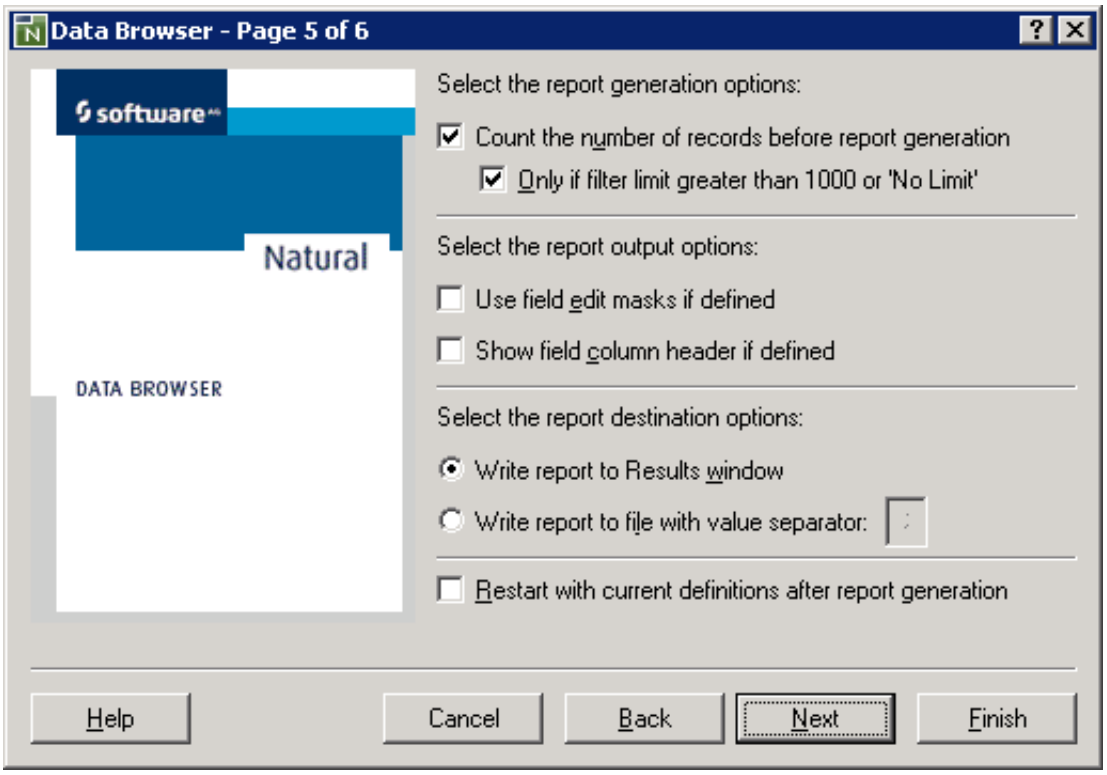
Context Menu

The context menu of the filter criteria on **Page 4** provides the following function:

Properties	Opens a pop-up window containing properties of the selected field. (For more information, refer to *Field Properties*).

Report Options

The report options of the data browser are provided on **Page 5**: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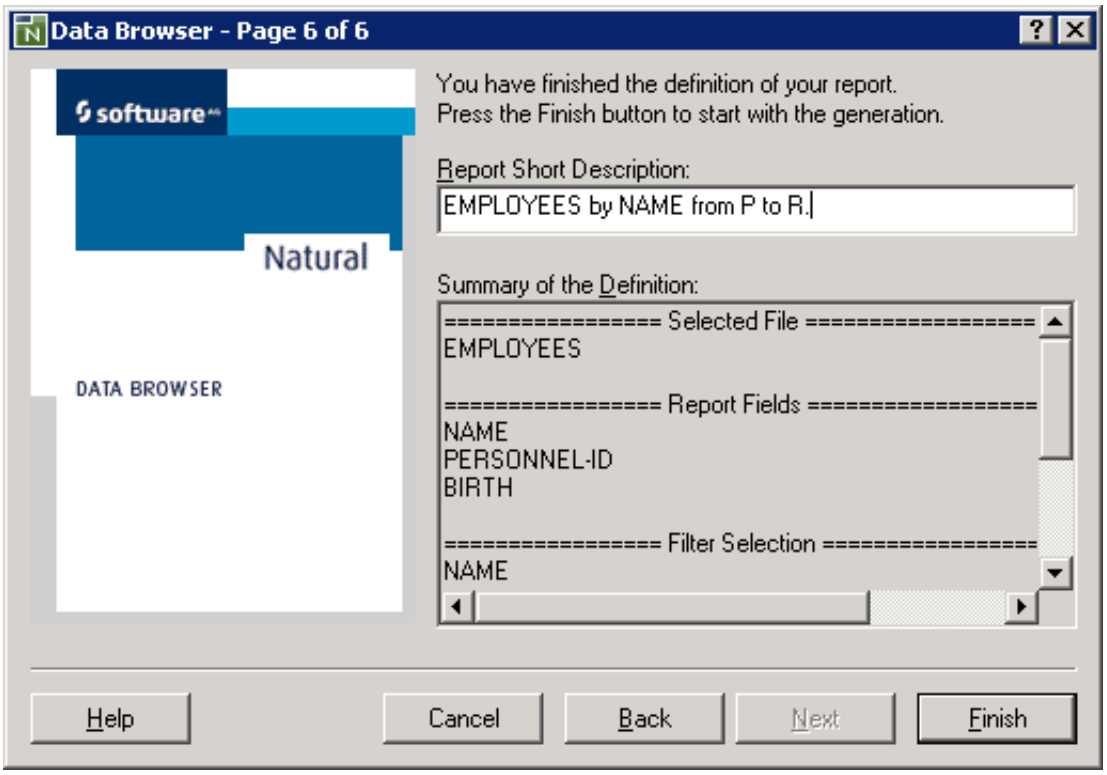
software
Natural
DATA BROWSER
Select the report generation options:
Count the number of records before report generation
Only if filter limit greater than 1000 or 'No Limit'
Select the report output options:
Use field edit masks if defined
Show field column header if defined
Select the report destination options:
Write report to Results window
Write report to file with value separator:
Restart with current definitions after report generation
Help
Cancel
Back
Next
Finish

Count the number of records before report generation	Displays the number of records that meet the selection and filter criteria specified on the previous pages of the data browser. The number is displayed before the report is generated. This option is selected by default.
Only if filter limit greater than 1000 or 'No Limit'	Displays the number of records only if a number greater than 1000 is entered as filter limit or if no filter limit is set on **Page 4** (see *Filter Criteria*). This option is selected by default.
Use field edit masks if defined	If defined for the selected fields, uses edit masks for displaying the field values.
Show field column headers if defined	If defined for the selected fields, displays the column headers instead of the field names.
Write report to Results window	Displays the report generated in the **Results** window. This option is selected by default.
Write report to file with value separator	Writes the report generated to a text file, which can be used for spreadsheet manipulation. This file contains character-separated values that delimiter rows and columns. You can change the value separator for columns by replacing the default value separator semicolon (;) with another special character. A blank character is not allowed.
Restart with current definitions after report generation	Restarts the data browser on **Page 2**, with the definitions used for the previous report generation.

Summary

When you have finished specifying report generation options, all report definitions are summarized on the last page of the data browser:



In the **Report Short Description** text box, you can replace the default description (Report of *ddm-name*) by your own text of up to 253 characters as shown in the example above. The first 30 characters of this description are then shown as a tab in the **Results** window. The full text is displayed on the tabbed page **Description** of the report properties (see also *Properties of Report*). The full text is also contained in the header section of a printout (see also *Print*).

Note:
When you choose **Finish**, a warning appears if more than 200 columns are to be created for the report, which can cause significant performance problems. A large number of columns can result from a large number of fields or a wide range of array occurrences specified for the report.

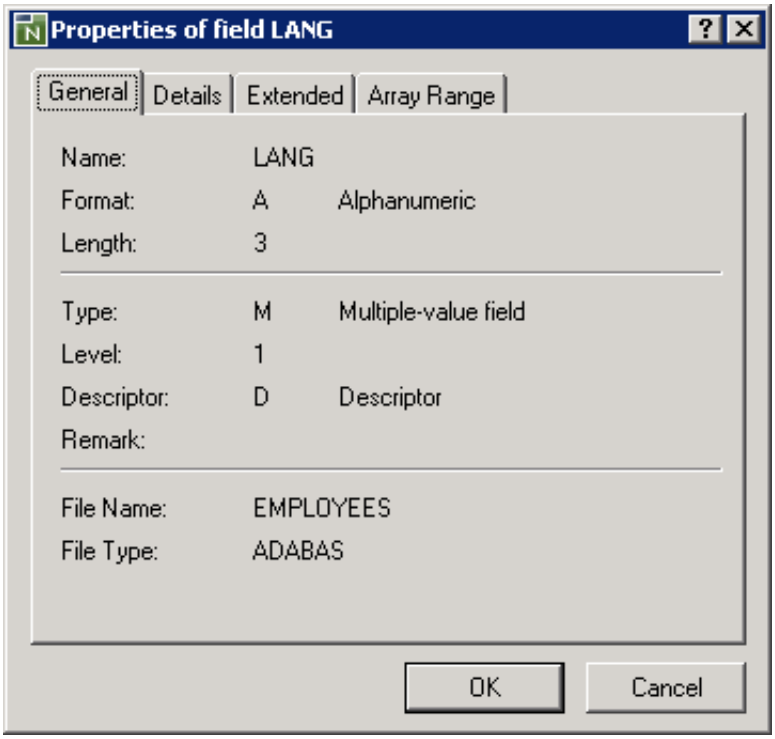
Field Properties

You can use the context menu to view the properties of each field that is listed on a page (Pages 2 to 4) or in the **Results** window.

The property sheet of each field always contains the tabbed pages **General** and **Details**. An additional page is provided for the following fields:

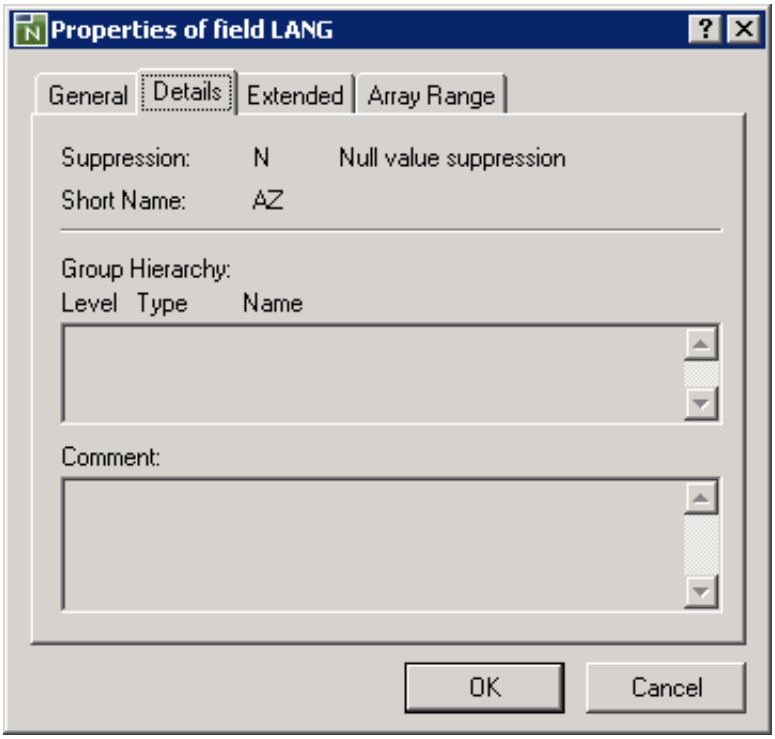
- For fields with header or edit-mask entries, an **Extended** page with layout information.
- For fields with array definitions, an **Array Range** page with the option to specify a range of occurrences.

The tabbed page **General** shows the following:


Properties of field LANG
General
Details
Extended
Array Range
Name: LANG
Format: A Alphanumeric
Length: 3
Type: M Multiple-value field
Level: 1
Descriptor: D Descriptor
Remark:
File Name: EMPLOYEES
File Type: ADABAS
OK
Cancel

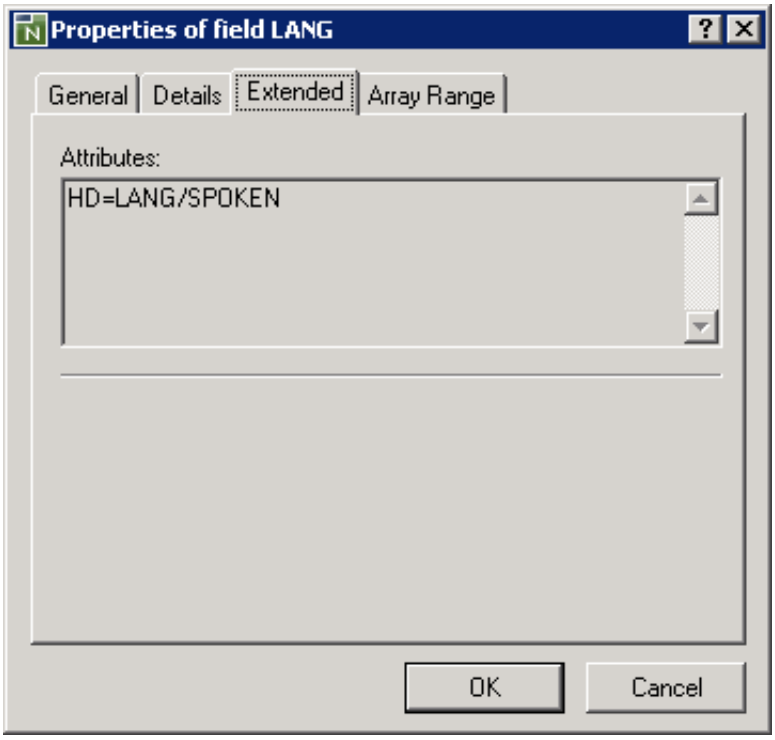
Name	Name as of the DDM.
Format	Format as of the DDM.
Length	Length as of the DDM.
Type	Field type: group, periodic group, multiple-value field or elementary field.
Level	Level as of the DDM.
Descriptor	Descriptor type: *blank* — No descriptor. **D** — Descriptor **S** — Subdescriptor or superdescriptor (not applicable to an XML database) **H** — Hyperdescriptor (not applicable to an XML database) **N** — Non-descriptor (not applicable to an XML database) See further information, see also *Columns of Field Attributes* in the *DDM Editor* documentation.
Remark	Remark as of the DDM.
File Name	File name as of the DDM.
File Type	Database type.

The tabbed page **Details** shows the following:



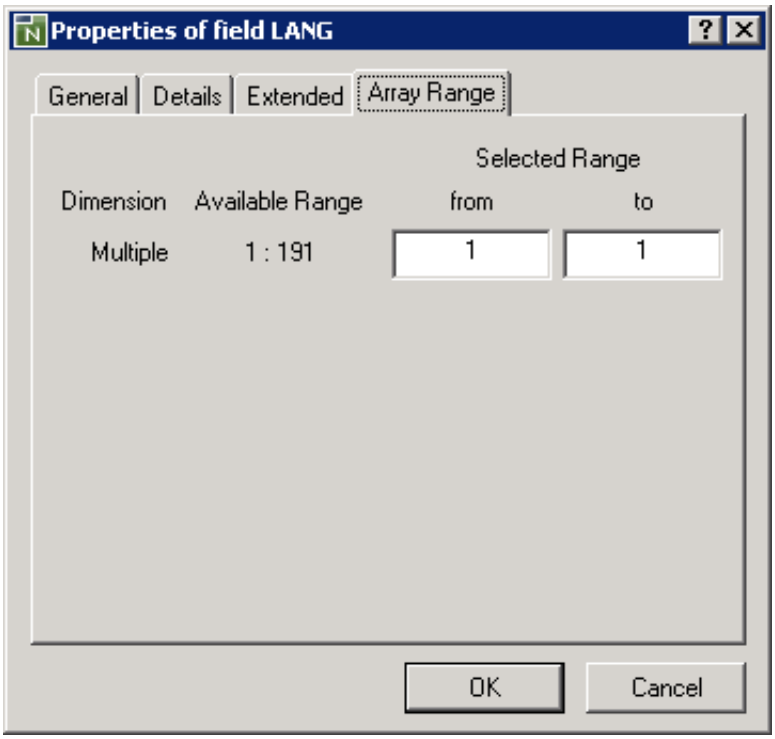
Suppression	Null value suppression, fixed storage, not null.
Short Name	Adabas short name of the field.
Group Hierarchy	All groups and group levels to which a field belongs.
Comment	Comment as of the DDM.

The (optional) tabbed page **Extended** shows the following:



Attributes	Edit mask (EM=) or header (HD=) as of the DDM.

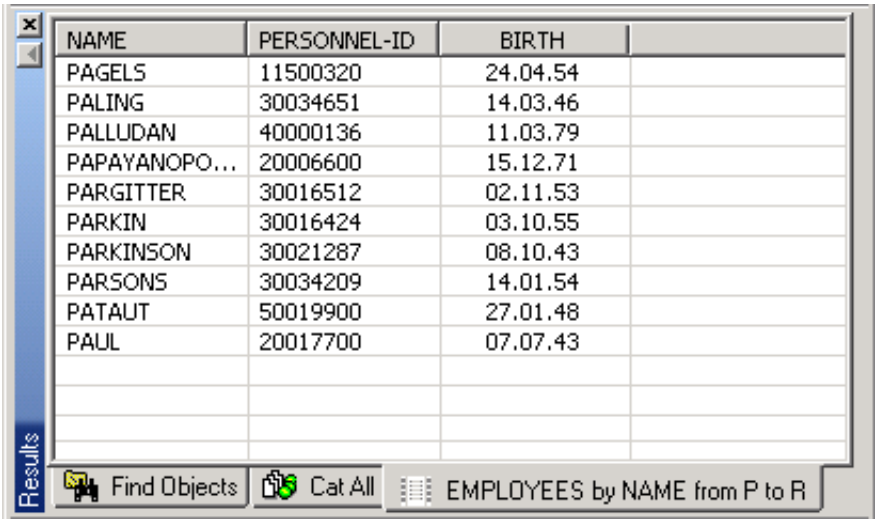
The (optional) tabbed page **Array Range** shows the following:



Dimension	Array dimension(s) of the field: `Periodic` and/or `Multiple` — For a periodic group or a multiple-value field from an Adabas database. `1` — For the dimension of a field from an SQL database. `1, 2, 3` — For one, two or three dimensions of a field from an XML database.
Available Range	Shows the range of valid values that can be entered in the **from** and **to** fields: `1 - 191` — A number range from 1 to 191 for a field created from an Adabas or SQL database. `1 -` *n* — A number range from 1 to *n* for a field created from an XML database where *n* denotes the maximum number of occurrences as defined for this field in the DDM.
Selected Range	For each dimension of an array, you can specify the range of occurrences to be displayed in the report: In the **from** field, you enter the first occurrence to be displayed and in the **to** you can enter the last occurrence. The value entered in **from** must be greater than the value entered in **to**. See also **Available Range** below. The default setting for both fields is `1` for the first occurrence of each dimension. The selected range(s) of occurrences are indicated on **Page 3** (see *Output Report Fields*) and **Page 6** (see *Summary*). In the report, each occurrence is listed in a separate column, in a left-to-right order, from the first occurrence of the first dimension to the last occurrence of the last dimension. **Caution:** A wide range of occurrences can result in a large number of columns, which can cause significant performance problems.

Results Window

The result list(s) of the data browser are displayed in the **Results** window of Natural Studio similar to the example shown below:



You can have as many reports as you want in parallel. With a click on the column header, the lines are sorted by the column value ascending or descending. Modification of the column sequence is possible by shifting the column headers. One or more lines of the result list can be selected for further processing by using the context menu.

Note:
A field header definition that spans multiple lines in a `DISPLAY` statement, is displayed in a single line, where each line break is denoted by a slash (/).

This section provides information on the following:

- Context Menu
- Properties of Report

Context Menu

The context menu of the results list provides the following functions:

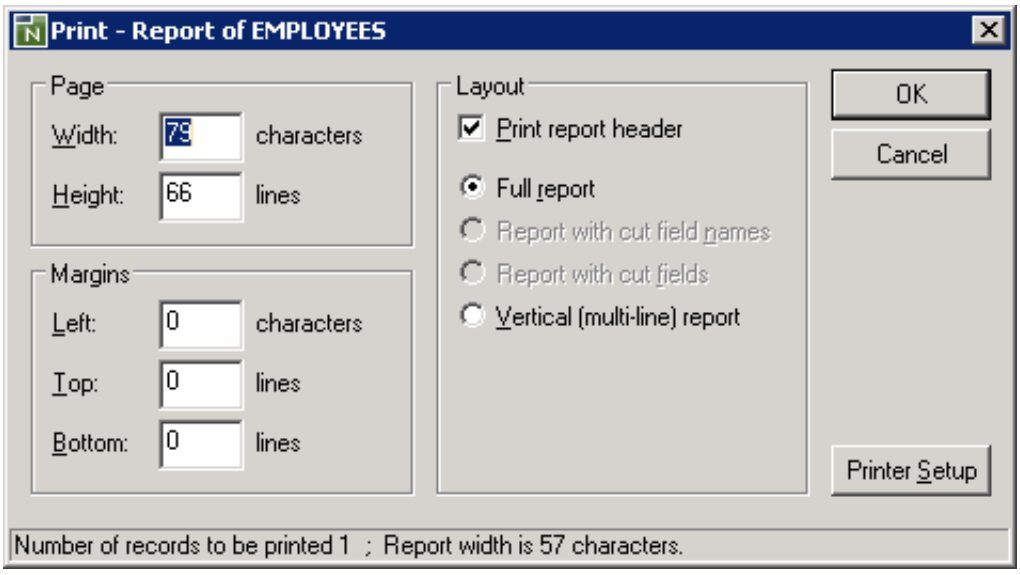
Select All	All lines of the result list are selected.	
Expand All Columns	Expands all columns in the result list.	
Collapse All Columns	Collapses all columns in the result list.	
Output	**Print Selection**	Prints the selected lines of the result list. For more information, refer to *Print*.
	Export Selection to Textfile	Writes the selected lines of the result list in a text file (.txt). For more information, refer to *Save Report Data*.
Delete Tab	Deletes the current tab.	
Delete Tab and Hide	Deletes the current tab and closes the **Results** window.	
Properties	Additional information for the current report is displayed. (For more information, refer to *Properties of Report*).	

This section provides information on the following:

- Print
- Save Report Data

Print

The **Print Selection** function invokes a window similar to the example below:



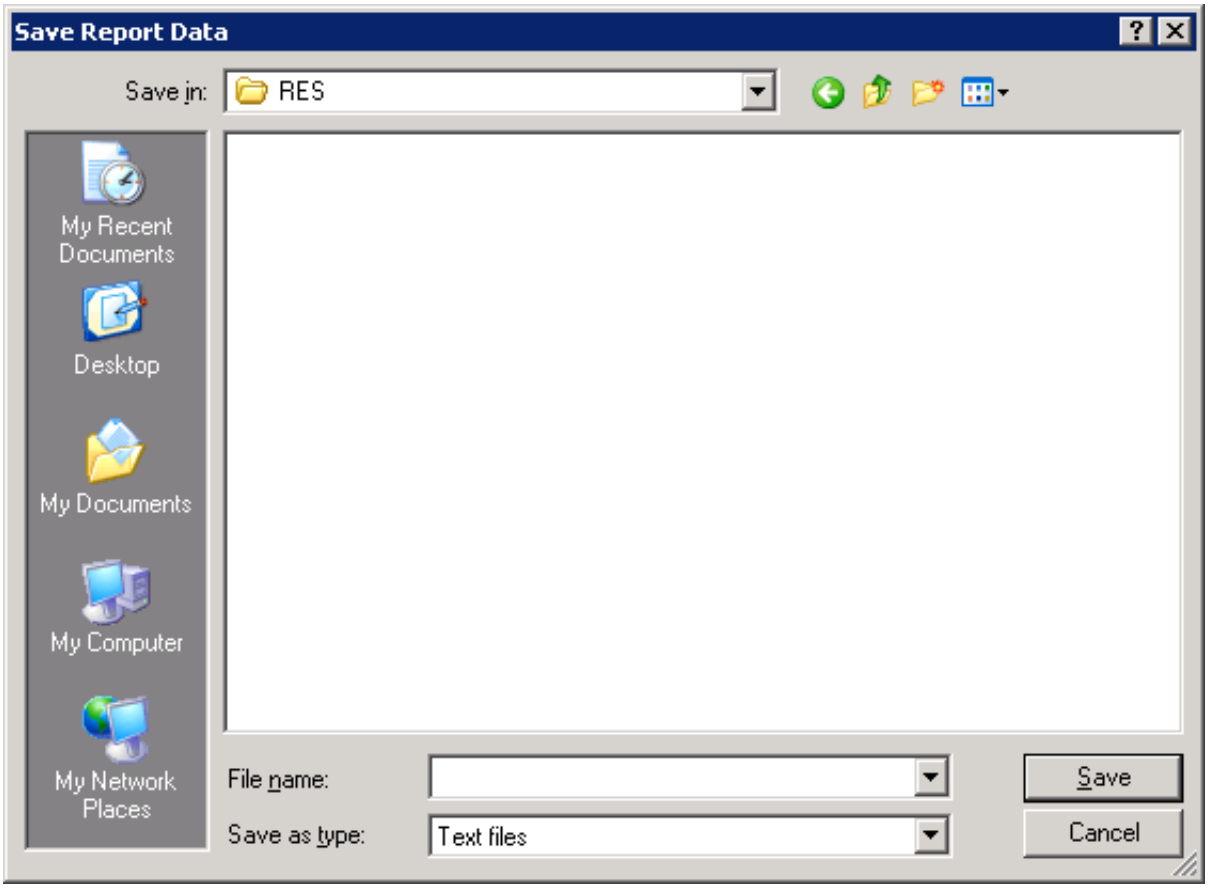
The **Print** window provides the following options:

Page	Define the report width and height as matching to printer page size.
Margins	You can change the margin settings to adjust the distance between the report data and the left, top or bottom edge of the printed page.
Layout	For some criteria you can define the printed report layout. A report header can be specified which contains the report creation date, the selection criteria, the number of records printed, and the full text of the report description as created by the data browser wizard on **Page 6**. A record format can be selected, as far as depending on the report size offered, to see a full report list, report list with cut header or fields or a report list with field headers and values in vertical sequence.

The status line informs about the selected number of records and the original width of the report in characters. With the **Printer Setup** button, you can open the PC printer setup dialog to select one of the printers available in your system.

Save Report Data

The **Export Selection to Textile** function invokes a **Save Report Data** window similar to the example below:

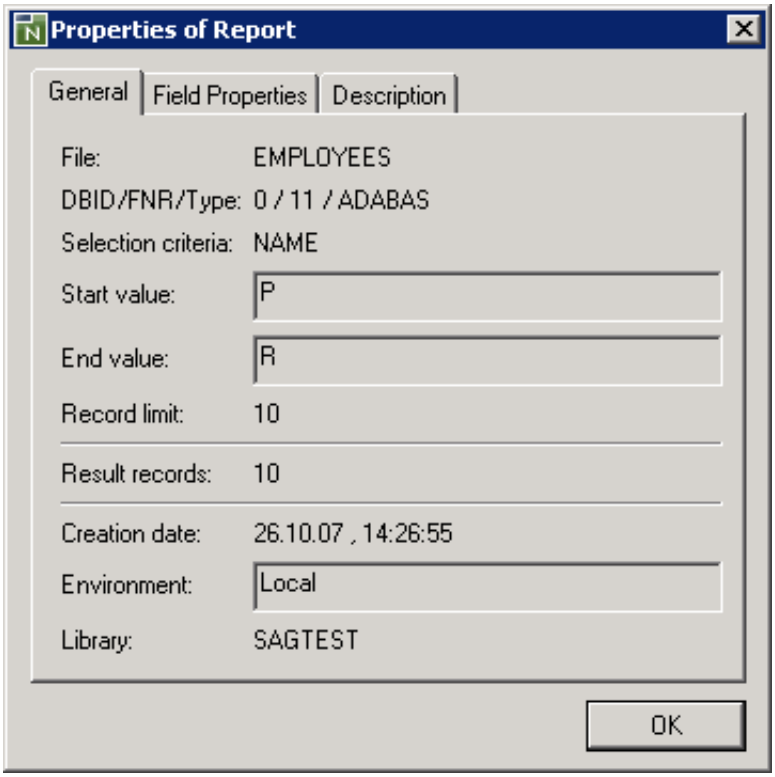


The standard save dialog enables you to enter a file name completed with the file type `.txt`.

The text file contains the selected lines of the result list with the delimiters: the input delimiter character as specified with the `ID` session parameter (default is a comma) separates field values and carriage return/line feed separates records.

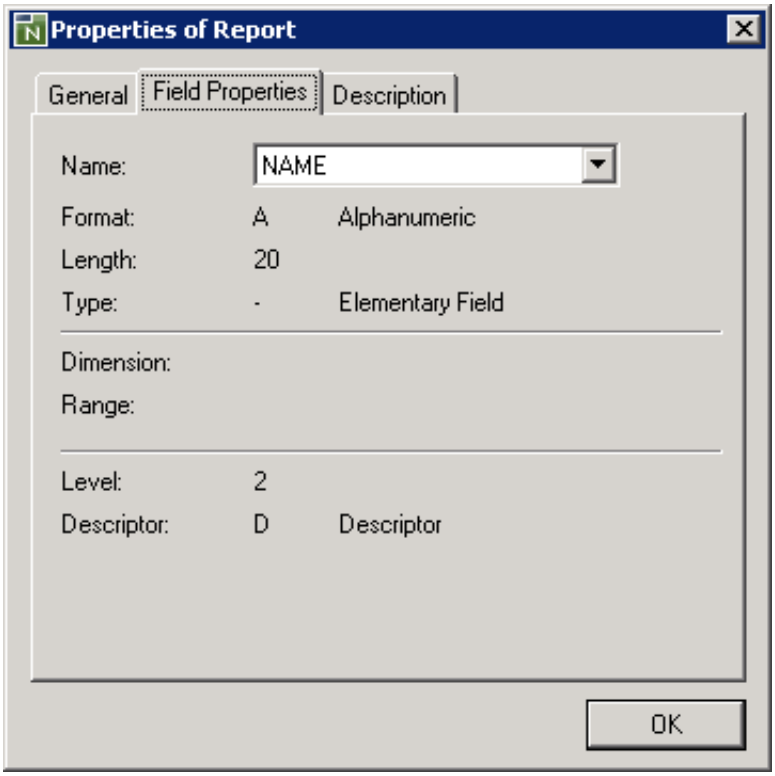
Properties of Report

The **Properties** function invokes a property sheet similar to the example below:



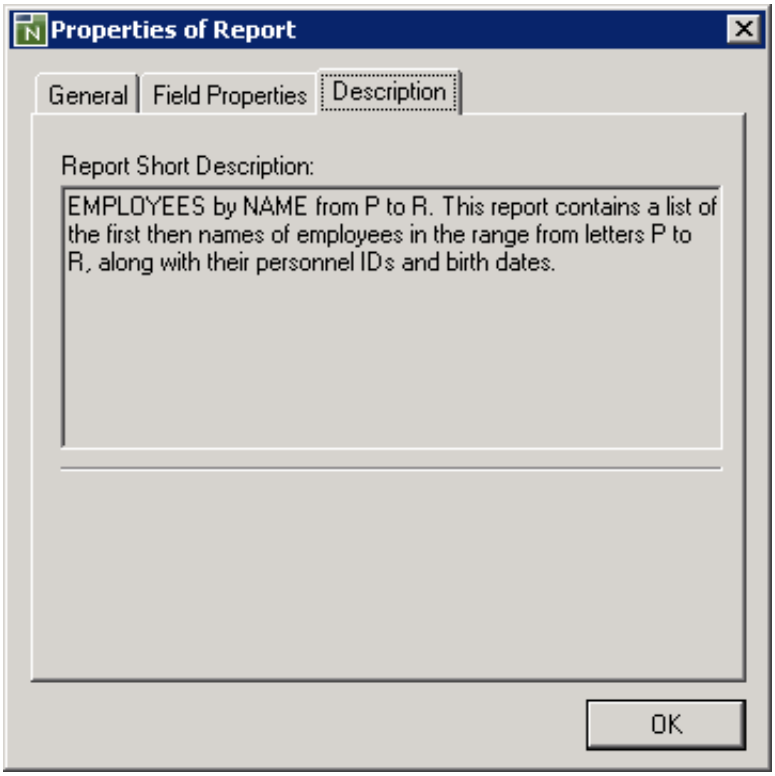
The tabbed page **General** shows the following:

File	DDM name.
DID/FAR/Type	Database ID, file number and database type.
Selection criteria	Selection criteria as entered in the data browser.
Start value	Start value as entered in the data browser.
End value	End value as entered in the data browser.
Record limit	Record limit as entered in the data browser.
Result records	Number of records shown in the report.
Creation date	Date and time when the report was created.
Environment	Name or alias name of the environment where the data were retrieved.
Library	The library from which the data browser was started to create the current report.



The tabbed page **Field Properties** shows the following:

Name	Enables a field name selection to see its properties.
Format	Format as of the DDM.
Length	Length as of the DDM.
Type	Group, periodic group, multiple-value field or elementary field.
Dimension	Shows `Periodic` for a periodic group or `Multiple` for a multiple-value field (Adabas), or one or more numbers of array dimensions (`1` for SQL or `1` to `3` for XML).
Range	Shows the range of array occurrences specified for a field.
Level	Level as of the DDM.
Descriptor	Descriptor, subdescriptor/superdescriptor, hyperdescriptor or non-descriptor.



The tabbed page **Description** shows the full text of the report description as created by the data browser wizard on **Page 6**.