Using the DDM Editor Window

The DDM editor window is organized in a table where the field definition data is contained in rows and columns. The editor provides a separate row for each field defined for a DDM. All attribute definitions that belong to a field are contained in the cells of this row.

You can add a new field to a DDM source or modify the attributes of an existing field by using one of the following methods:

- Enter each attribute definition into the respective cell of a field row or replace existing definitions.
- Copy fields from the current database file if available.
- Copy fields within a DDM or from another DDM by using copy and paste functionality.

This section describes the columns contained in the DDM editor window and the functions provided to create or modify a DDM field, change the display of the DDM editor window, rearrange columns, or hide fields that are not required for a current editing operation.

- DDM Header Information
- Using File Coupling
- Columns of Field Attributes
- Selecting Fields or Field Attributes
- Inserting and Modifying Fields
- Copying, Cutting and Pasting Fields
- Finding and Replacing Field Names
- Deleting Fields
- Rearranging Columns
- Showing or Hiding Fields
- Specifying Extended Field Attributes
- Displaying Descriptor Information
- Displaying Tamino Doctype Information

Related Topics in the Using Natural Studio Documentation:

- *Setting the Options* and *DDM Editor Options*
- *Shortcut Keys* and *DDM Editor Shortcut Keys*

DDM Header Information

This section describes the fields contained in the **DDM Header** dialog box that are used to display and change the correlation between the database and the DDM.

The information contained in the **DDM Header** dialog box is similar to the information displayed in the status bar. For details on the status bar, refer to *Status Bar* in the *Using Natural Studio* documentation. You can switch the status bar on or off by setting the corresponding DDM editor option as described in the *Using Natural Studio* documentation.

- Displaying and Modifying DDM Header Fields
- Explanation of DDM Header Fields

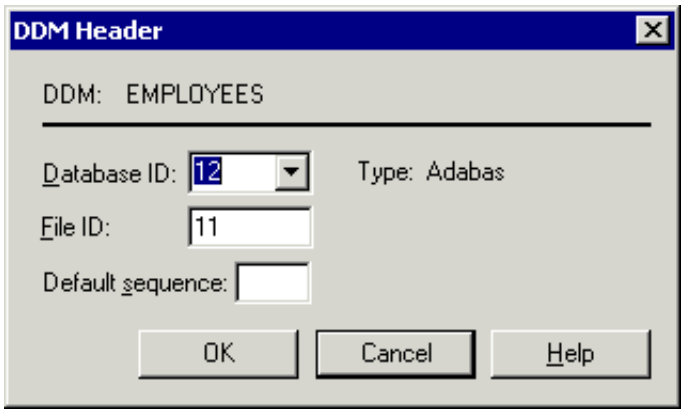
Displaying and Modifying DDM Header Fields

To display and modify DDM header fields

1. From the **DDM** menu, choose **DDM Header**.

   Or:
   Choose the **DDM Header** toolbar button.

   The **DDM Header** dialog box appears with the name of the current DDM displayed at the top of the box:

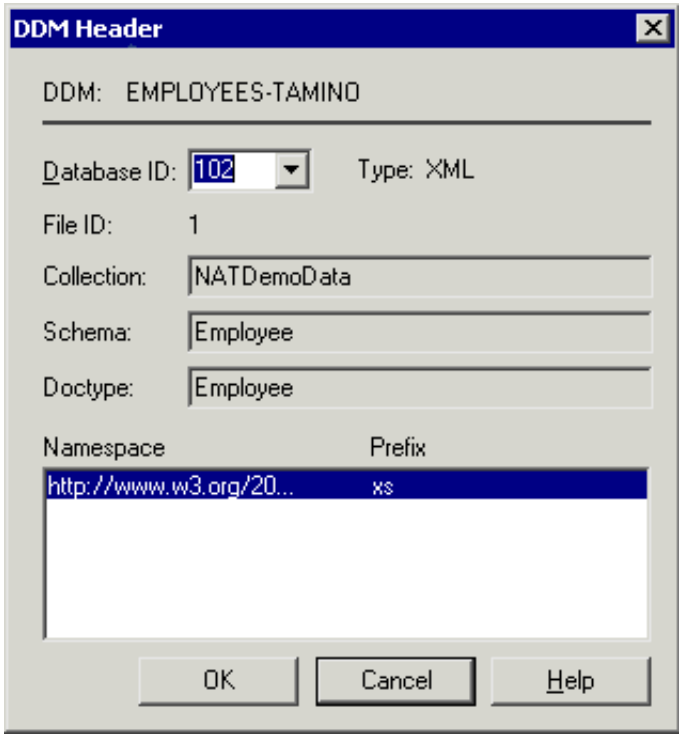


2. From the **Database ID** combo box, choose an ID, or enter an ID in the box: see also **Database ID** in *Explanation of DDM Header Fields*.

   In the **File ID** text box, enter a new value: see also **File ID** in *Explanation of DDM Header Fields*.

   In the **Default sequence** text box (not applicable to Tamino), enter a short name as default sequence: see also **Default sequence** in *Explanation of DDM Header Fields*.

   For Tamino, the **DDM Header** dialog box also displays read-only doctype information as shown in the example below:



3. Choose **OK** to save the new values.

Explanation of DDM Header Fields

The fields contained in the DDM header are described in the following table. For the Tamino-specific fields, see *Displaying Tamino Doctype Information*.

Header Field	Description
Database ID	The database ID (DBID) as specified in the global configuration file. **DBID** contains the database file referenced by the DDM. Valid range: `0` to `65535` (except `255`) See also: *DBMS Assignment* and *Database Management* in the *Configuration Utility* documentation. If `0` (zero) is specified, the default DBID as specified with the `UDB` profile parameter in the Natural parameter file (NATPARM) is used.
File ID	The number of the file being referenced in the database The file number of a DDM from Tamino is always `1` and cannot be modified. Valid range: `1` to `5000`
DDM	The name of the DDM currently contained in the work area of the DDM editor.
Default sequence	Not applicable to Tamino. The default sequence by which the file is read when it is accessed with a `READ LOGICAL` statement in a Natural program. See also the `READ` statement described in the *Statements* documentation. The default sequence is specified with the two-character field short name. The system validates the short name based on the selected file number. If the database is accessible, the short name is checked against the corresponding field in the database file. If such a field does not exist in the database, a selection list of valid short names is displayed. If the database cannot be accessed, no selection list is generated.
Type	The type of database.

Using File Coupling

Only applies to Adabas.

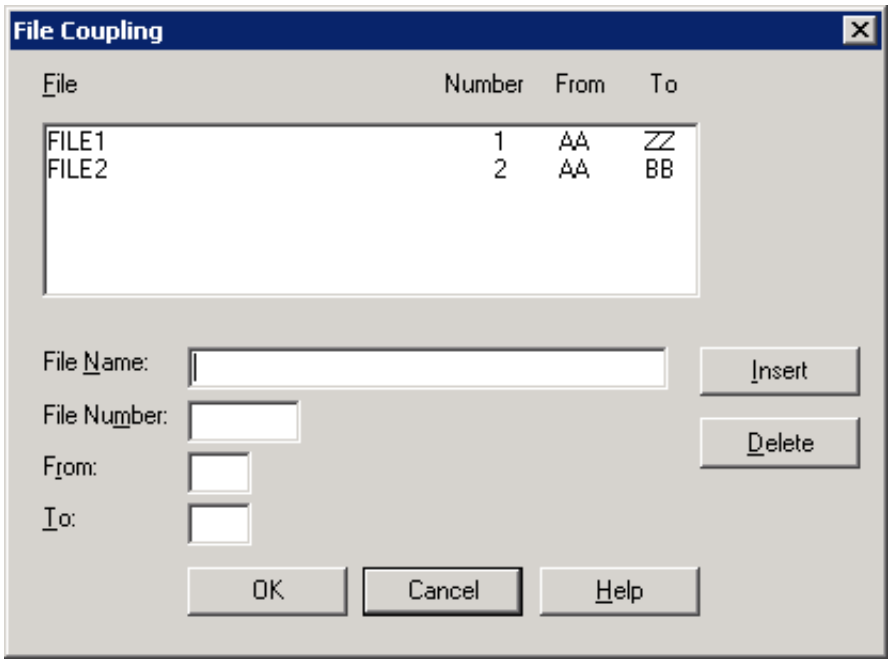
You can use the **File Coupling** option to list or specify Adabas files that are physically coupled to a DDM.

To list or specify a coupled file

1. In the active DDM editor window, from the **DDM** menu, choose **File Coupling**.

   Or:
   Choose the  **File Coupling** toolbar button.

   The **File Coupling** dialog box appears as shown in the example below:



All files coupled to the current DDM are listed together with the short names of the descriptors used for coupling.

2. In the **File Name** text box, enter the name of the file to be coupled to the DDM.

   In the **File Number** text box, enter the number of the file to be coupled to the DDM.

   In the **From** text box, enter the field short name, at which the file coupling begins.

   In the **To** text box, enter the field short name, at which the file coupling ends.

3. Choose **Insert** to add the defined entry to the list box.

   Or:
   Choose **Delete** to remove the selected entry from the list box.

For further information on physical file coupling, refer to the *Adabas* documentation.

Columns of Field Attributes

This section describes the field attributes that can be defined in the rows and columns of the DDM editor window.

The display of the columns depends on whether a column is relevant for the DDM being edited. For example, Tamino-specific information is not displayed for a DDM created from an Adabas database.

Column Heading	Field Attribute
None	The indicator column is displayed in the leftmost section of the editor window. It can contain the following signs which appear next to the appropriate row:  An error sign which indicates incorrect syntax. You are then required to enter a valid value. A tool tip provides error information.  An information sign which warns you of potential problems caused by the value entered. A tool tip helps evaluate and eliminate the problem.  or A toggle key which indicates an expanded or a collapsed block of fields (see also *Showing or Hiding Fields*).
Type	The type of field: *blank* Elementary field. This type of field can hold data and does not contain any other fields. It can have only one value within a record. `G` Group. A group is a number of fields defined under one common group name. This allows you to reference several fields collectively by using the group name instead of the names of all the individual fields. Such fields cannot hold any data, but are only containers for other fields. **Note:** Groups defined in a DDM need not necessarily be defined as groups in the Natural object(s) that reference this DDM. `M` Not applicable to Tamino. Multiple-value field. This type of field can have more than one value within a record. See also *Multiple-Value Fields* in the *Programming Guide*. `P` Not applicable to Tamino. Periodic group. A group of fields that can have more than one value within a record. See also *Periodic Groups* in the *Programming Guide*. * Comment line.

Column Heading	Field Attribute
Level	The level number assigned to the field. Levels are used to indicate the structure and grouping of the field definitions. This is relevant with view definitions, redefinitions and field groups (see the relevant sections in the *Programming Guide*). Valid level numbers are `1 - 7`. For Tamino: valid level numbers are `1 - 99`. Level numbers must be specified in consecutive ascending order.
Short Name	Not applicable to Tamino. The **Short Name** column displays the two-character short name of the corresponding field in the database file. In a remote environment: The two-character code used for segment types in DL/I. **Creating Fields:** If you create a new DDM field and the display of the **Short Name** column is switched off, the DDM editor assigns to the new field a new short name that has not yet been used for another field. This means that for the new field there is no correlation between the database file and the DDM. To guarantee that the short name of a new field is checked against the database, create a field by using the **Insert** function as described in *Inserting and Modifying Fields*.
Name	The name of the field. It can be 3 - 32 characters long for Adabas fields and 1 - 32 characters for SQL columns and Tamino doctypes. In a remote environment on a mainframe platform, the name can be 1 - 19 characters long for DL/I fields. The rules to create a name comply with the naming conventions for user-defined variables (see the *Using Natural Studio* documentation), except that the first character of the name must always be a Latin capital letter (A - Z). In addition, the name must not start with `L@` or `N@`. These prefixes identify indicator fields as explained in the following section. The field name is the name used in other Natural objects (for example, in a program) to reference the field. The field name is unique across the whole DDM. For Tamino, the field name is not necessarily the same name as **Tag Name** (see *Tamino-Specific Extended Field Attributes*).
Format	The Natural data format of an elementary field, such as `A` (alphanumeric), `P` (packed numeric) or `L` (logical). For valid Natural data formats, refer to *Format and Length of User-Defined Variables* in the *Programming Guide*. To modify the format of a field, see also the explanations in *Inserting and Modifying Fields*.

Column Heading	Field Attribute

Length	The standard length of an elementary field.
	
	This length can be overridden by the user in a Natural program.
	
	For numeric fields (Natural data format `N`), the length is specified as *nn.m*, where *nn* is the number of digits before the decimal point an *m* is the number of digits after the decimal point.
	
	In the **Length** input field, you can specify either the field length as a numeric value or enter the keyword `DYNAMIC` to specify that the field length is variable.
	
	Depending on the Natural data format selected from the **Format** drop-down list, the **Length** column is preset to one of the following values:
	
	`10` for formats `A`, `B` and `U`
	`4` for formats `F` and `I`
	`7` for formats `N` and `P`
	`6` for format `D` (standard value)
	`1` for format `L` (standard value)
	`12` for format `T` (standard value)
	
	For further information, see *DDM Generation and Editing for Varying Length Columns* in the *Programming Guide*.

Column Heading	Field Attribute
Suppression	Not applicable to Tamino. Null-value suppression option: *blank* Indicates that standard Adabas suppression is used; that is, trailing blanks in alphanumeric fields and leading zeros in numeric fields are suppressed. `F` Indicates that the field is defined with the Adabas fixed storage option; that is, no suppression is used and the field is stored without compression. `N` Indicates that the field is defined with the Adabas null-value suppression option. This means that null values for the field are not stored in the inverted list and are not returned when the field is used in the `WITH` clause of a `FIND` statement, or in a `HISTOGRAM` or `READ LOGICAL` statement. `M` Indicates that the field is defined with the SQL null-value option `not null`. The **Remarks** text box (see *Specifying Extended Field Attributes*) for this field contains `NN NC` (`not null`, `not counted`). Below this field, the corresponding null-indicator field is listed.

Column Heading	Field Attribute
Descriptor	The Adabas descriptor type of an elementary field that is not an array. A descriptor can be used as the basis of a database search performed with the `READ` or the `FIND` statement. For example: a field from an Adabas database that has a `D` or an `S` in the **Descriptor** column can be used in the `BY` clause of the `READ` statement. Once a record has been read from the database using the `READ` statement, a `DISPLAY` statement can reference any field that has either a `D` or an `S` in this column. For a Tamino XML schema, an element is marked as a descriptor in the DDM when it has an overall multiplicity of a maximum of 1, in other words, if the `maxOccurs` values of the element and all of its predecessors in the schema are never greater than 1. Descriptors types are: *blank* No descriptor. This field is not a descriptor. `D` Elementary descriptor. Value lists are created and maintained for this field by Adabas, so that this field can be used as a search criterion in a `FIND` statement, as a sort key in a `FIND` statement, or to control logical sequential reading in a `READ` statement. `H` Not applicable to Tamino. Hyperdescriptor. A hyperdescriptor is a user exit in Adabas. For Natural, it provides the same functionality as a phonetic descriptor (see below). `N` Not applicable to Tamino. Non-descriptor. A non-descriptor is not a descriptor, but can be used as a search field for a non-descriptor search. `P` Not applicable to Tamino. Phonetic descriptor. A phonetic descriptor allows the user to perform a phonetic search on a field (for example, a person's name). A phonetic search results in the return of all values which sound similar to the search value. `S` Not applicable to Tamino. Subdescriptor or superdescriptor. If a sub/superdescriptor contains a multiple-value field or a field from a periodic group (or part of such a field), the sub/superdescriptor is marked with an `M` or a `P` in the field type column; this enables Natural to create the correct search algorithms for this sub/superdescriptor. See also *Displaying Descriptor Information*.
Header	The header to be produced for each field specified in a `DISPLAY` statement: see *Specifying Extended Field Attributes*.
Edit Mask	The edit mask to be used: see *Specifying Extended Field Attributes*.

Column Heading	Field Attribute
Remarks	A comment which applies to a field and/or the DDM.
Tag Name	Tamino-specific information as described in *Tamino-Specific Extended Field Attributes*.
XPath	
Occurrence	
Flags	
Default Value	
Fixed Value	
SQLTYPE	SQL-specific information as described in *SQL-Specific Extended Field Attributes*.

Indicator Fields

An indicator field is used to retrieve the length of a variable length field or information about the data significance (`NULL` value indicator) of a database field. An indicator field does *not* provide the contents of a database field.

A database field name starting with `L@` or `N@` is interpreted as an indicator field, according to the indicator specified in the *NATCONV.INI* configuration file (see also `IDENTIFIER-VALIDATION` in *How to Use Different Character Sets* in the *Operations* documentation. Therefore, a database field name must not start with any of these character strings unless it represents an indicator field.

The following happens when a DDM is initially generated.

- An `L@`*`xxxxx`* field is automatically added for every variable length field, where *`xxxxx`* is the name of the related field.

  This applies to long alpha (LA) and large object (LB) fields in an Adabas file.

  If the length indicator relates to an LA, LB or LOB field, the Natural data format/length must be I4. For a VARCHAR field, the format/length must be I2.

- An `N@`*`xxxxx`* field is automatically added for a field that may contain a `NULL` value, where *`xxxxx`* is the name of the related field.

  This applies to Adabas fields defined with the SQL Null Value Option. The Natural data format/length of a `NULL` indicator field must be I2.

Selecting Fields or Field Attributes

Before you perform an editor function, you select (highlight) the row or row cell where you want to create, modify or delete a field.

To select a field attribute

1. If a field row is selected:

   Press F2.

The leftmost cell of the field row is selected.

Or:
First, click on the row that contains the cell you want to select and then click on the cell where you want to add or modify an attribute.

The specified cell is selected.

2. If a single cell is selected:

   Click on the row cell where you want to add or modify an attribute.

   Or:
   Navigate to the row cell where you want to add or modify an attribute by pressing TAB, SHIFT+TAB, UP-ARROW, DOWN-ARROW, LEFT-ARROW, RIGHT-ARROW, HOME or END.

   The specified cell is selected.

To select a field

1. If a single cell is selected:

   Press SHIFT+SPACEBAR.

   The field row of the cell is selected.

   Or:
   Click on the leftmost column of the field row you want to select.

   The specified field row is selected.

2. If a row is selected:

   Click on the field row you want to select.

   Or:
   Navigate to the field row you want to select by pressing UP-ARROW, DOWN-ARROW, HOME or END.

   The specified field row is selected.

To select a range of fields

1. If a single cell is selected:

   Press SHIFT+SPACEBAR.

   The field row of the cell is selected.

   Or:
   Click on the leftmost column of the first field row in the range.

The specified field row is selected.

2. If a field row is selected:

   Click on the leftmost column of the first field row in the range.

   Or:
   Navigate to the first field row in the range by pressing UP-ARROW, DOWN-ARROW, HOME or END.

   The first field row in the range is selected.

3. Hold down SHIFT while you select the row of the last field in the range.

   The rows of the specified field range are selected.

To select all fields

- From the **Edit** menu, choose **Select All**.

  Or:
  Choose the  **Select All** toolbar button.

  Or:
  Press CTRL+A.

  All field rows contained in the current DDM source are selected.

Inserting and Modifying Fields

This section provides instructions for inserting fields into a DDM source or modifying fields within a DDM source.

To insert a field from the current database file

1. Select the row where you want to place the new field.

   The insert position (before or after the selected field) of the new field depends on the current setting of:

   - The  **Insert After On/Off** toolbar button.
   - The **Insert before/Insert after** editor option (see: *DDM Editor Options* in the *Using Natural Studio* documentation).

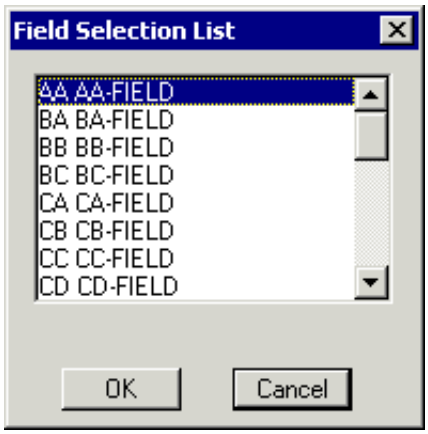
2. From the **Field** menu, choose **Insert**.

   Or:
   Choose the  **Insert Field** toolbar button.

If you are editing a DDM that cannot reference the corresponding fields in the database file, a blank row is inserted before or after the selected field.

Note:
You cannot validate new field attributes if the database is not available. See also the *Creating Fields* note for column **Short Name** in the section *Field Attribute Definitions*.

If you are editing a DDM that references fields in the database file, the **Field Selection List** dialog box appears as shown in the example below:



From the **Field Selection List** dialog box, select a field.

The new field is pasted into the DDM source either before or after the field selected in Step 1.

3. In the blank column fields, enter a value for each field attribute.

   Press TAB to move from one column field to the next.

When you insert a field of the type group or periodic group, the level of each subsequent field is automatically incremented properly.

To modify a field

- Select the row cell that contains the field attribute definition you want to change and either overwrite the existing value or choose a value from a selection box.

When you modify the level of a field of the type group or periodic group, the level of each subsequent field is automatically incremented or decremented properly, depending on the new level value.

When you modify the Natural data format of a field, the current length is kept if it is also valid for the new data format. Otherwise, the current length specification is automatically replaced by a valid default length (see also the description of the **Length** column).

Copying, Cutting and Pasting Fields

The copy/cut and paste functions of the DDM editor are used to copy, move or delete one or more fields within the current DDM source or between different DDM sources.

To copy or cut and paste fields

1. Select the fields to be copied or cut.
2. From the **Edit** menu, choose **Copy** or **Cut**.

   Or:
   Choose the **Copy** or **Cut** toolbar button.

   Or:
   Press CTRL+C or CTRL+X.

   The fields are placed on the clipboard and can be pasted into the current DDM source or in another DDM source.
3. If the fields are to be pasted into another DDM, open the respective DDM source.
4. Select the field before or after which the copied or cut fields are to be pasted (see also the insert position in *To insert a field*).
5. From the **Edit** menu, choose **Paste**.

   Or:
   Choose the **Paste** toolbar button.

   Or:
   Press CTRL+V.

   The copied or cut fields are pasted into the current DDM source at the specified position.
6. To paste the same fields again, repeat Steps 3 through 5.

When you cut or paste a field of the type group or periodic group, the level of each subsequent field is automatically adjusted properly.

Finding and Replacing Field Names

The search function is used to search for field names and replace field names in the current DDM source.

The find function is performed on all data definitions including collapsed blocks of fields (see also *Showing or Hiding Fields*).

Caution:
There is no undo function available to restore original names.

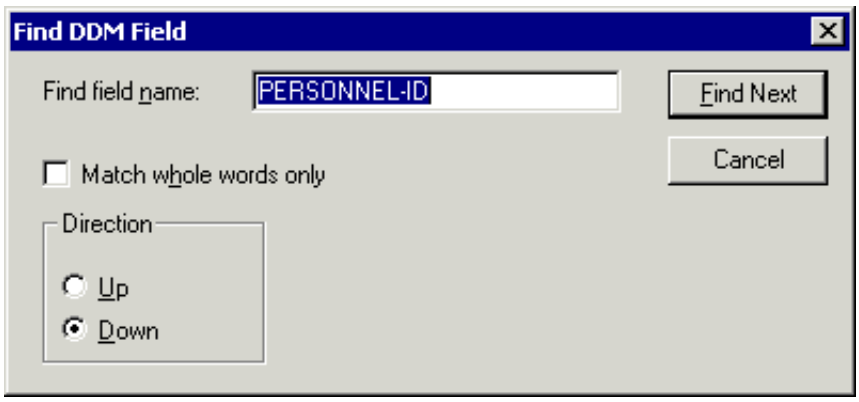
To search for a DDM field name

1. From the **Edit** menu, choose **Find**.

   Or:
   Choose the  **Find** toolbar button.

Or:
Press CTRL+F.

The **Find DDM Field** dialog box appears as shown in the example below:



2. In the **Find field name** text box, enter the long name of the field for which to search (in the example above: `PERSONNEL-ID`).

   Set the **Match whole words only** check box if you want to find whole field names only and not parts of field names. If the box is not set, all instances of the search string will be found.

   In the **Direction** section, set the option button **Up** or **Down** to specify whether the search is to be performed from the cursor position to the end of the DDM source or from the cursor position to the beginning of the DDM source. The default setting is **Down**.

3. Choose **Find Next**.

   If no instance of the search string is found, an appropriate message is displayed.

   If an instance of the search string is found, it will be selected.

4. To search for additional instances of the search string:

   from the **Edit** menu, choose **Find Next**.

   Or:
   Press F3.

   Or:

   Choose the **Find Next** toolbar button.

To replace a field name

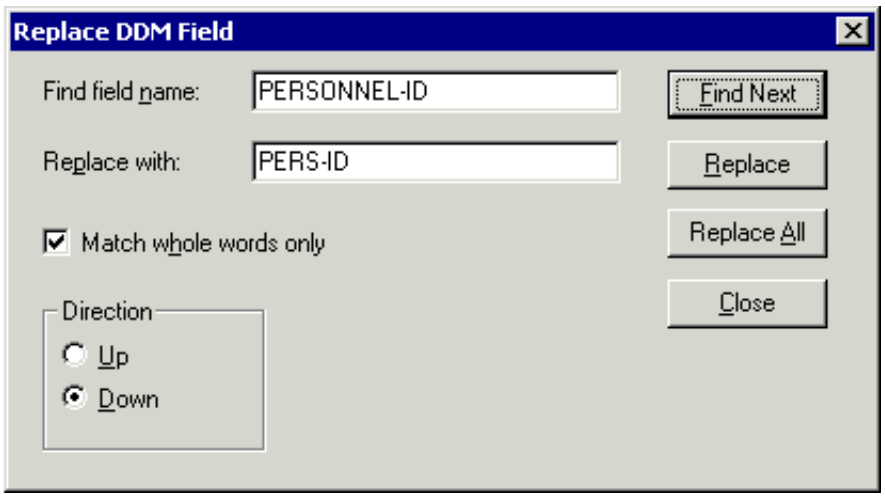
1. From the **Edit** menu, choose **Replace**.

   Or:

   Choose the **Replace** toolbar button.

Or:
Press CTRL+H.

The **Replace DDM Field** dialog box appears as shown in the example below:



2. In the **Find field name** text box, enter a search string.

   In the **Replace with** text box, enter a replacement string.

   Set the **Match whole words only** check box if you want to find whole field names only and not parts of field names. If the box is not set, all instances of the search string will be found.

   In the **Direction** section, set the option button **Up** or **Down** to specify whether the search is to be performed from the cursor position to the end of the DDM source or from the cursor position to the beginning of the DDM source. The default setting is **Down**.

3. Choose **Replace** to replace the next hit found in the source.

   Choose **Find Next** and **Replace** to find the next hit and replace it.

   Or:

   Choose the **Find Next** and **Replace** toolbar buttons.

   Or:

   Choose **Replace Next** to replace the next hit found without selecting the hit first.

   Or:
   Choose **Replace All** to replace all search strings found.

   If no instance of the search string is found, an appropriate message is displayed.

4. Choose **Close** to exit the dialog box.

Deleting Fields

When a field is deleted, it is cut from the DDM source but is *not* placed on the clipboard. Once deleted, the field can no longer be recovered.

To delete fields from the DDM editor

1. Select the field(s) you want to delete.
2. From the **Edit** menu, choose **Delete**.

   Or:
   Choose the **Delete** toolbar button.

   Or:
   Press DEL.

   The fields are deleted from the DDM source and cannot be recovered.

When you delete a field of the type group or periodic group, the level of each subsequent field is automatically decremented properly.

Rearranging Columns

In the editor window, you can adjust the display of the DDM to your needs by resizing, moving or hiding columns that are not required for an editing operation in the current DDM.

- Resizing Columns
- Moving Columns
- Hiding or Displaying Columns

Resizing Columns

You can automatically adjust a single column or all columns to the best size, or change the width of a single column to a specific size.

To resize all columns to best fit

- Choose one of the following methods:
  - Select a field as described in *To select a field*.
  - From the **View** menu, choose **Customize Columns**.

    Or:
    In any column heading, click the right mouse button and choose **Customize Columns** from the context menu.

The **Customize Columns** dialog box appears.

- Select the **Best Fit** check box. This option is not selected by default.

All columns in the active editor window are automatically resized to the size that best fits into the editor window whereby the column headings always remain visible.

Or:
Press CTRL+PLUS.

Or:
If you want to apply **Best Fit** to all active editor windows, set the corresponding editor option described in *DDM Editor Options* in the *Using Natural Studio* documentation.

To resize all columns to best fit while typing in text

1. Open the **Customize Columns** dialog box as described in *To resize all columns to best fit*.
2. Select the **Best Fit** check box and, additionally, select the **Auto Fit** check box.

   Each column in the active editor window is then automatically adjusted to fit the text you type in a row cell or a **Definition** dialog box when you leave the column or dialog box respectively.

   Or:
   If you want to apply **Best Fit** and **Auto Fit** to all active editor windows, set the corresponding editor options described in *DDM Editor Options* in the *Using Natural Studio* documentation.

To resize a single column to fit the contents

- In the heading of the column you want to change, place the pointer over the right border. When the pointer changes to a divider, double-click on the border between the column headings. Note that you cannot resize the leftmost column.

  The column is automatically adjusted to fit its contents.

To resize a single column to a specific size

- In the heading of the column you want to change, place the pointer over the right border. When the pointer changes to a divider, drag the divider to the width you require. Note that you cannot resize the leftmost column.

  The width of the column has changed to the specified size.

To save a resized table layout

- Open the **Customize Columns** dialog box as described in *To resize all columns to best fit* and choose one of the following buttons.
  - **OK** saves the new table layout for the current editor session.
  - **Save Layout** saves the new layout in your user profile and retains it for future editor sessions.

- **Restore Layout** overwrites the current layout with the layout previously saved in the user profile. Choose **OK** to save this layout.
- **Restore Defaults** followed by **OK** overwrites the layout saved in the user profile with the default layout initially provided by the editor. Choose **OK** to save this layout.

Or:
In the editing area of the editor window, press CTRL+ALT+L.

The new layout is saved in your user profile and retained for future editor sessions.

Moving Columns

You can change the table layout by moving single or multiple columns.

To move a column

1. Choose either of the following methods:
   - Select a field as described in *To select a field*.
   - Open the **Customize Columns** dialog as described in *To resize all columns to best fit*.
   - From the **Displayed Columns** list box, select the columns you want to move and choose **Move Up** or **Move Down** (if required repeatedly) until the columns have reached the target position.

     The top-to-bottom order of the list box corresponds to the left-to-right of the table in the editor window, that is, the top list column corresponds to the leftmost table column.

   Or:

   - Drag the column heading you want to move and drop it in the position required. Note that you cannot move the leftmost column.
   - Open the **Customize Columns** dialog box as described in *To resize all columns to best fit*.
2. To keep the new table layout, proceed as described in *To save a resized table layout*.

Hiding or Displaying Columns

You can change the table layout by hiding or displaying columns.

To hide a column by rearranging the display order

1. Select a field as described in *To select a field*.
2. Open the **Customize Columns** dialog box as described in *To resize all columns to best fit*.
3. From the **Displayed Columns** list box, select the columns you want to hide.

   The top-to-bottom order of the list box corresponds to the left-to-right of the table in the editor window, that is, the top list column corresponds to the leftmost table column.

Note:
You cannot select **Type**, **Level**, **Name**, **Format** and **Length** which are mandatory for the table layout.

4. Choose **Remove**.

   The selected columns are removed from **Displayed Columns** and appear in the **Hidden Columns** list box.

5. To keep the new table layout, proceed as described in *To save a resized table layout*.

To hide a column by moving column borders

1. In the heading of the column you want to hide, place the pointer over the right border. When the pointer changes to a divider, drag the divider to the left border until the column heading is completely invisible (right and left border lines must coincide).

   Note:
   You cannot hide the columns **Type**, **Level**, **Name**, **Format** and **Length** which are mandatory for the table layout.

   The hidden column then appears in the **Hidden Columns** list box of the **Customize Columns** dialog box.

2. To keep the new table layout, proceed as described in *To save a resized table layout*.

To display a hidden column

1. Select a field as described in *To select a field*.
2. Open the **Customize Columns** dialog box as described in *To resize all columns to best fit*.
3. From the **Hidden Columns** list box, select the columns you want to display in the editor window.
4. Choose **Add**.

   The selected columns are removed from **Hidden Columns** and appear in the **Displayed Columns** list box.

5. To keep the new table layout, proceed as described in *To save a resized table layout*.

Showing or Hiding Fields

You can show (expand) or hide (collapse) blocks of fields to improve readability and maintainability of DDMs with complex data structures. When a block of fields is collapsed, all fields contained in this block are hidden, including any other nested blocks if they are part of the chosen block. Hidden blocks retain their collapsed or expanded state.

Blocks that can be expanded or collapsed are blocks of fields that are defined for the same field level (1 to 99). Blocks are expanded or collapsed by the hierarchy of levels, from highest level 1 to lowest level 99. A block that contains fields from a lower-ranking level is contained in a block from a higher level.

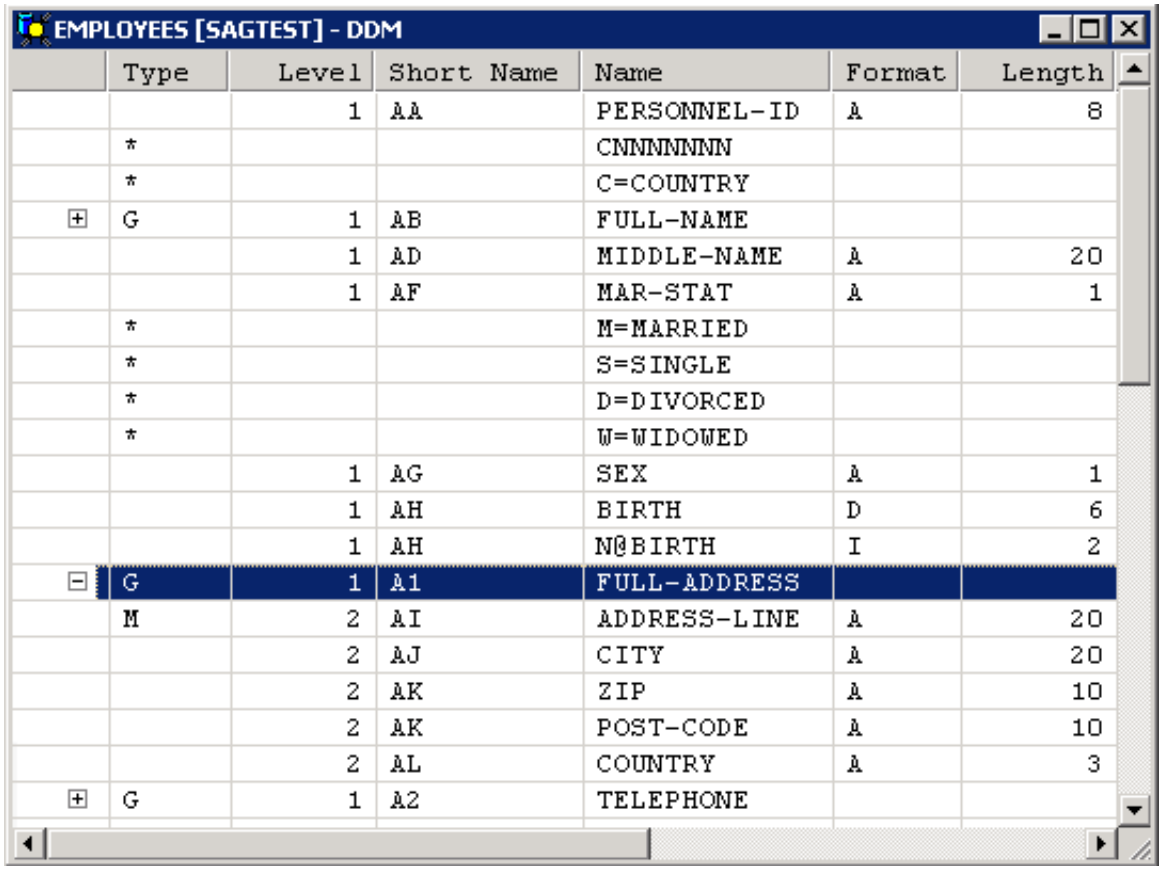
When scanning field definitions (see also *Finding and Replacing Fields*), collapsed blocks are also scanned.

If you want to expand and collapse blocks of fields, you need to set the respective editor option referenced in the instructions below.

To expand and collapse single blocks

1. Set the **Expand/Collapse** editor option as described in *DDM Editor Options* in the *Using Natural Studio* documentation.

   When the **Expand/Collapse** option is set, an expand/collapse toggle (⊟ or ⊞) appears as shown in the example below:



	Type	Level	Short Name	Name	Format	Length
		1	AA	PERSONNEL-ID	A	8
	*			CNNNNNNN		
	*			C=COUNTRY		
⊞	G	1	AB	FULL-NAME		
		1	AD	MIDDLE-NAME	A	20
		1	AF	MAR-STAT	A	1
	*			M=MARRIED		
	*			S=SINGLE		
	*			D=DIVORCED		
	*			W=WIDOWED		
		1	AG	SEX	A	1
		1	AH	BIRTH	D	6
		1	AH	N@BIRTH	I	2
⊟	G	1	A1	FULL-ADDRESS		
	M	2	AI	ADDRESS-LINE	A	20
		2	AJ	CITY	A	20
		2	AK	ZIP	A	10
		2	AK	POST-CODE	A	10
		2	AL	COUNTRY	A	3
⊞	G	1	A2	TELEPHONE		

   The toggle ⊟ indicates the first row of an expanded block.

   The toggle ⊞ indicates the first row of a collapsed block.

2. Click on the toggle ⊞ to expand the block or click on the toggle ⊟ to collapse the block.

   Or:
   Position the cursor in a row that contains the toggle ⊞ or ⊟ and, from the **View** menu, choose **Expand/Collapse** or choose the **Expand/Collapse** toolbar button.

Or:
Use any of the shortcut keys listed in *Shortcut Keys* in the *Using Natural Studio* documentation.

To expand or collapse all blocks

- From the **View** menu, choose **Expand All** or **Collapse All**.

  Or:
  Choose the **Expand All** or the **Collapse All** toolbar button.

Specifying Extended Field Attributes

The extended field editing function provides the option to specify default field attributes for headers and edit masks as well as remarks to be applied when the field is used in another Natural object (for example, in a program).

The header attribute specifies the default column header to be displayed above the field when it is output, for example, with a `DISPLAY` statement. If no header is specified, the field name is used as column header.

The edit mask attribute specifies the default edit mask to be used when the field is output, for example, with a `DISPLAY` statement. The edit mask must conform with Natural syntax rules and be valid for the Natural data format and length of the field.

The remark attribute specifies a comment about the field.

For Tamino, the extended field editing function also provides additional Tamino-specific information.

Related Topics:

- `DISPLAY` and `INPUT` in the *Statements* documentation
- *EM - Edit Mask* in the *Parameter Reference* documentation
- *EMU - Unicode Edit Mask* in the *Parameter Reference* documentation

The section below covers the following topics:

- Extended Field Attributes
- Tamino-Specific Extended Field Attributes
- SQL-Specific Extended Field Attributes
- Extended Field Attributes in a Remote Environment

Extended Field Attributes

This section describes how to display and edit the extended attributes of the fields contained in the current DDM.

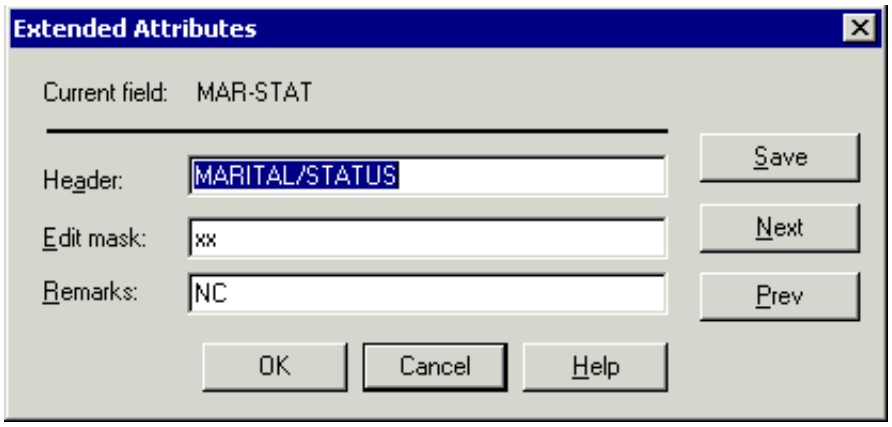
To display and edit extended field attributes

1. In the active DDM editor window, select a field.
2. From the **Field** menu, choose **Extended Attributes**.

   Or:

   Choose the **Extended Attributes** toolbar button.

   The **Extended Attributes** dialog box appears with the name of the selected field as shown in the example below:

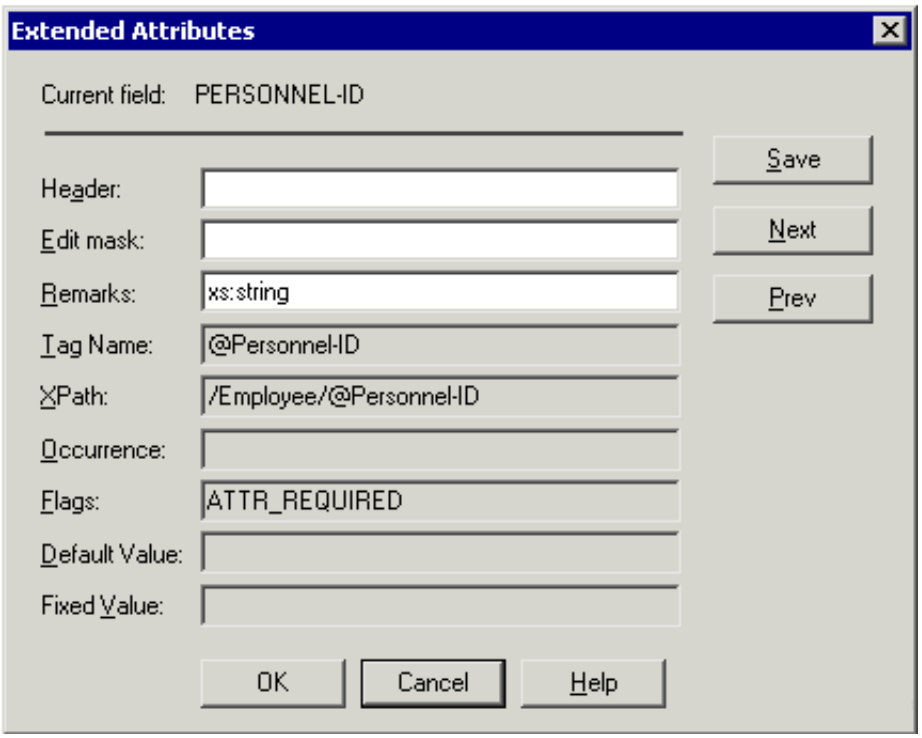


   If a header exists for the selected field, it is displayed in the **Header** text box. You can edit the header, or add a header if none exists.

   If an edit mask exists for the selected field, it appears in the **Edit mask** text box. You can modify the edit mask, or add an edit mask if none exists.

   If a remark exists for the selected field, it appears in the **Remarks** text box. You can edit the remark, or add a remark if none exists.

   For Tamino, Tamino-specific extended field attributes are displayed as shown in the example below:



3. Choose **Save** to save and validate any changes you have made for the current field.

   Choose **Next** to view and edit extended attributes for the next field in the DDM source.

   Or:
   Choose **Prev** to view and edit extended attributes for the previous field in the DDM source.

   (Commentary fields identified with an asterisk (*) are skipped.)

4. Choose **OK** to save and validate all field modifications.

   The DDM editor window appears.

Tamino-Specific Extended Field Attributes

Tamino-specific extended field attributes are extracted from Tamino XML schema definitions.

In addition to the text boxes **Header**, **Edit Mask** and **Remarks**, the following read-only Tamino-specific attributes are displayed in the **Extended Attributes** dialog box:

Attribute	Function
Tag Name	The name of the field within a Tamino doctype. This name may be not unique within the whole XML document. Some group fields might not have a `Tag Name`.
XPath	The complete XPATH that references a field within a Tamino doctype. XPATH information is used during application runtime to uniquely identify a data element in a given XML document. Therefore, it is not possible to change the XPATH information. Some group fields might not have an XPATH.

Attribute	Function
Occurrence	The minimum and maximum numbers of occurrences. In Tamino, the multiplicity of the field as extracted from the Tamino XML schema. The multiplicity of a field is expressed with the `maxOccurs` facet in the Tamino XML schema.

Attribute	Function
Flags	The flags represent the hierarchical field structure within a Tamino group structure. They are used internally to help in correctly recognizing special group structures (that is, the attributes of an element tag) or multiple occurrences. Additionally, the user can identify DDM fields which are either mandatory or optional in XML documents. Combinations of the flags for one field are possible. The following flags can be displayed: `ARRAY` — Field is an array; that is, `maxOccurs` is greater than 1. `GROUP_ATTRIBUTES` — Field is a group that contains the attribute sub-fields of the predecessor field. `GROUP_ALTERNATIVES` — Field is a group that represents the choice constructor; the choice elements are contained as sub-fields. `GROUP_SEQUENCE` — Field is a group that represents the sequence constructor; the sequence elements are contained as sub-fields. `GROUP_ALL` — Field is a group that represents all constructors; all elements are contained as sub-fields. `ATTR_REQUIRED` — Field is an attribute marked as required. `ATTR_OPTIONAL` — Field is an attribute marked as optional. `ATTR_PROHIBITED` — Field is an attribute marked as prohibited. `MULT_OPTIONAL` — Field can occur in the XML document but does not need to. `MULT_REQUIRED` — Field must occur in the XML document. `MULT_ONCE` — Field must occur exactly once in the XML document. `SIMPLE_CONTENT` — Field was defined as `complexType` with `simpleContent`.
Default Value	The default value assigned to the field; this attribute is not yet used.
Fixed Value	The fixed value assigned to the field; this attribute is not yet used.

SQL-Specific Extended Field Attributes

In addition to the text boxes **Header**, **Edit Mask** and **Remarks**, the following read-only SQL-specific attribute is displayed in the **Extended Attributes** dialog box:

Attribute	Function
SQLTYPE	Information generated from the data types BLOB (Binary Large Object) or CLOB (Character Large Object) if contained in an Oracle database.

Extended Field Attributes in a Remote Environment

Only applies to DDMs generated from VSAM files.

This section describes how to display and edit the extended field attributes of a DDM generated from a VSAM file.

Related Topic:

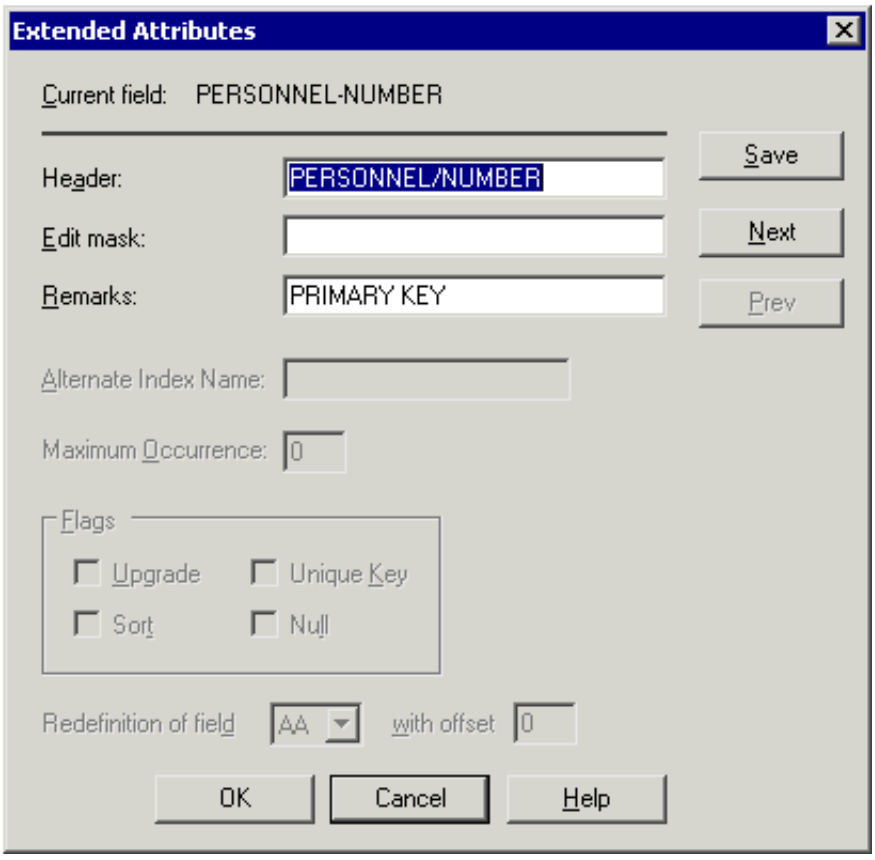
Extended Editing at Field Level - Natural for VSAM documentation.

To display and edit extended field attributes

1. In the active DDM editor window, select a field.
2. From the **Field** menu, choose **Extended Attributes**.

   Or:
   Choose the  **Extended Attributes** toolbar button.

   The **Extended Attributes** dialog box appears with the name of the selected (current) field indicated at the top of the window as shown in the example below:



3. If a header exists for the selected field, it is displayed in the **Header** text box. You can modify the header, or add a header if none exists.

   If an edit mask exists for the selected field, it appears in the **Edit mask** text box. You can modify the edit mask, or add an edit mask if none exists.

   If a remark exists for the selected field, it appears in the **Remarks** text box. You can modify the remark, or add a remark if none exists.

   If an alternate descriptor (Type A) or superdescriptor (Type X) is defined for the field, you can enter an alternative index name.

   If the field is a multiple or periodic group field, you can specify the number of occurrences in the **Maximum Occurrence** text box.

   If an alternate descriptor (Type A) or superdescriptor (Type X) is defined for the field, you can set the flags **Upgrade**, **Unique Key**, **Sort** and **Null**.

   If the field has a primary or secondary key descriptor (Type A) or superdescriptor (Type X), you can select the field short name from the **Redefinition of field** combo box.

4. Choose **Save** to save and validate any changes you have made for the current field.

   Choose **Next** to view and edit extended attributes for the next field in the DDM source.

Or:
Choose **Prev** to view and edit extended attributes for the previous field in the DDM source.

(Commentary fields identified with an asterisk (*) are skipped.)

5. Choose **OK** to save and validate all field modifications.

   The DDM editor window appears.

Displaying Descriptor Information

Only applies to Adabas.

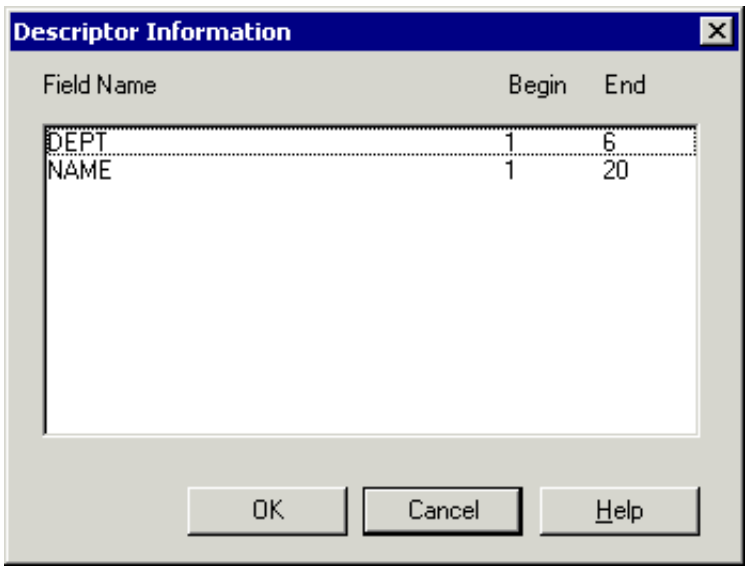
With this function you can display the definition(s) of a subdescriptor field or a superdescriptor field.

To display subdescriptor or superdescriptor definitions

1. In the DDM editor window, select the row or the cell that contains an S which identifies a subdescriptor or superdescriptor field.
2. From the **Field** menu, choose **Descriptor Information**.

   Or:
   Choose the **Descriptor Information** toolbar button.

   The **Descriptor Information** dialog box appears as shown in the example below:



   The definition(s) of the subdescriptor or superdescriptor are displayed (in the example above: DEPT and NAME) next to **Field Name** and the field offsets are displayed next to **Begin** and **End**.

3. Choose **OK** to exit the **Descriptor Information** dialog box.

Displaying Tamino Doctype Information

In the DDM editor window, you can display read-only Tamino-specific doctype information.

To display doctype information

- From the **DDM** menu, choose **DDM Header**.

  Or:
  Choose the **DDM Header** toolbar button.

  The **DDM Header** dialog box appears (see also the section *DDM Header Information*).

The attributes displayed in the **Doctype Information** section are described in the table below. See also *Introducing Tamino XML Schema Language* in the *Programming Guide*.

Attribute	Function
Collection	The name of the collection which is used within the Tamino database.
Schema	The name of the Tamino XML schema which is used within the Tamino database.
Doctype	The name of the doctype within the collection.
Namespace URI Prefix	The list of namespace URI/prefix pairs which corresponds to the doctype.