

# Defining More Attributes of Fields

If MORE Attr. is set to Y, a window is displayed containing additional attributes for selection.

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The following rules apply:

- Only those types of additional attributes appear in the window that apply to the type of field. For example: the option Adabas security & Edit mask is not contained in the list when a DB2 index field is processed.
- More than one choice can be made at a time. The respective input maps are then displayed one after the other.

The additional attributes are described in the following sections.

## 3GL Specification

```

13:06:25          ***** P R E D I C T  4.2.2  *****                2002-07-31
                                - Modify Field -
Field ID ..... HNO-EL1                                Added 2002-07-31 at 12:55
File ID ..... HNO-FI1                                  by HNO

Ty L Field ID          F  Cs Length  Occ  D U DB N NAT-1
* - - - - - - - - - - * - - - - - - - - - * * - - * - - - -
  1 HNO-EL1            A    2.0      AA  AA N

Specifications for 3GL
Gr.structur ..... (n)
Justify ..... (R)
Synchronized ..... (S)
Initialize with ...*
  Init value .....
Indexed by .....
Depending on .....
    
```

### Attributes

Gr. structur	<p>The field attribute Gr.structur is used to change the record layout generated from a PE/PC field. If Gr.structur is set to N, all fields within a PE group are treated as multiple value fields. Setting Gr.structur to N prevents the format buffer for Adabas from becoming very large. Gr.structur = N can only be specified for real fields in the deepest PE group (highest level number). For example: if there are 3 PE groups in the file on level 1, 4 and 6, only the PE groups on level 6 can be marked with Gr.structur = N.</p> <p>If Gr.structur is set to blank, PE/PC groups are to be generated as groups which occur n times as a whole.</p>
Justify	<p><b>R</b> When COBOL copy code is generated, the statement JUSTIFIED RIGHT is added for this field. Any data written to this field is then right-justified.</p> <p><b>L</b> Data will be left-justified. Default.</p>
Synchronized	<p>Applicable to fields of type I, F or B and length 1, 2, 4 or 8.</p> <p><b>S</b> when Assembler, COBOL or PL/I copy/include code or a record layout is generated, this field can be aligned on a half-word, word, or double-word boundary (speeding up arithmetic operations). This affects format buffer generation and the offsets of the fields in the record buffer. Slack-bytes are inserted into the record buffer by the assembler or compiler but they are built into any format buffer by Predict using space characters X.</p>
Initialize with	<p>Determines the initial value for generation. To be used instead of the standard value (zeros for a numeric field, blanks for an alphanumeric field).</p> <p><b>S</b> blank</p> <p><b>L</b> low value</p> <p><b>H</b> high value</p> <p><b>Z</b> zero</p> <p><b>Q</b> quote</p> <p><b>F</b> Fill with string specified in the parameter Init. value (mandatory). For example: if X is specified an the field length is 4, XXXX will be used for initialization.</p> <p><b>blank</b> Field will be initialized with the string specified in the field Init. value. If no Init. value is specified, no initialization is performed.</p>
Init. value	<p>If Initialize with is either F or blank a value used for initialization of a field must/can be specified. Length and format of the Init value must be valid for the field. For binary fields hexadecimal constants such as FB0A are valid.</p> <p>See also Condition Name and Value below.</p>
Indexed by	<p>String that is used when generating the COBOL INDEXED BY clause (only valid for fields of type MU/MC or PE/PC).</p>

Depending on	String used when generating the COBOL DEPENDING ON clause (only valid for fields of type MU/MC or PE/PC).
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## Condition Name and Value

```

13:04:26          ***** P R E D I C T 4.2.2 *****          2002-07-31
                        - Modify Field -
Field ID ..... VE-FIELD          Modified 2002-07-31 at 12:21
File ID ..... HEB-A              by HEB

Ty L Field ID          F Cs Length  Occ  D U DB N NAT-1
*- - - - -            *- - - - -    - - - * * - - * - - - -
   1 VE-FIELD          A    3.0          AA N

Condition name          FC * Condition value

EDIT:  Owner: N  Desc: N * Veri: Y          Scroll to: 1
    
```

<b>Attributes</b>	
Condition name	<p>A value to be used when generating either equate data in Assembler copy code or a level 88 entry in COBOL copy code.</p> <p>Up to 29,970 condition names can be entered. Each name needs at least one corresponding condition value. Using condition names can make logical conditions and assignments easier to handle.</p>
FC	<p>Figurative constant. Valid values:</p> <p><b>S</b> blank</p> <p><b>L</b> low value</p> <p><b>H</b> high value</p> <p><b>Z</b> zero</p> <p><b>Q</b> quote</p> <p><b>F</b> Fill with string specified in the parameter Condition. value. For example: if X is specified an the field length is 4, XXXX is used as condition value.</p> <p><b>blank</b> The string specified in the field Condition value is used.</p>
Condition value	<p>The length and format of this value must be valid for this field. This value must have a corresponding condition name.</p> <p>Up to 29,970 condition values can be entered. If several values correspond to the same name, put the name before the first value and leave the name field blank before later values. THRU in the name field indicates a range of values ending with the value on that line and beginning with the value on the previous line.</p>

## Field Name Synonyms

```

13:48:12          ***** P R E D I C T 4.2.2 *****          2002-07-31
                    - Modify Field -
Field ID ..... PD-A2                      Added 2002-07-31 at 12:10
File ID ..... PD-A-TEST3                  Modified 2002-07-31 at 13:08

Ty L Field name          F Cs Length  Occ  D U DB N NAT-1
*- - -----          *- - -----  ---- * * -- * -----
   2 PD-A2              A    2.0              AF

Field name synonyms
User defined .....
NATURAL .....
COBOL .....
PL/I .....
BAL/ASSEMBLER .....
FORTRAN .....
PASCAL .....
Language ADA .....
Language C .....

EDIT: * Owner: N Desc: N Veri: N
    
```

Attributes	
Field name synonyms	Synonyms to be assigned to the field when definitions in the following programing languages are generated: Natural, COBOL, PL/I, BAL (Assembler), FORTRAN, PASCAL, ADA or C.

## Old Mode Synonyms

This option is only provided for compatibility with old versions of Predict.

Whether this option is displayed depends on the parameter Old mode synonyms of the screen Defaults ->General defaults -> Synonyms:

### N

Default setting. Compatibility with old versions is not required.

### Y

Up to 90 synonyms can be defined as Natural synonyms. These create additional entries in the DDM which have the same attributes as the original object but different names.

```

13:10:46          ***** P R E D I C T 4.2.2 *****                2002-07-31
                        - Modify Field -
Field ID ..... PDS                                     Modified 2002-07-31 at 13:01
File ID ..... PD-D1                                    by PD

      Field synonym                                     Field synonym

1                                           2
3                                           4
5                                           6
7                                           8
9                                           10
11                                          12
13                                          14
15                                          16
17                                          18
19                                          20
21                                          22
23                                          24
25                                          26
27                                          28
29                                          30
EDIT:  Owner: N   Desc: N * Veri: N           More:  Synonyms: N
    
```

## Adabas Security and Edit mask

```

13:48:35          ***** P R E D I C T 4.2.2 *****                2002-07-31
                        - Modify Field -
Field ID ..... PD-A2                                     Added 2002-07-31 at 12:01
File ID ..... PD-A-TEST3                               Modified 2002-07-31 at 13:08

Ty L Field name                                     F Cs Length   Occ  D U DB N NAT-1
*- - - - - * - - - - - * - - - - - * * - - * - - - -
  2 PD-A2                                           A   2.0           AF

ADABAS attributes
Edit mask .....
Security access level .. (0-15)
Security update level .. (0-15)

EDIT: * Owner: N   Desc: N   Veri: N
    
```

Attributes	
Edit mask	The Adabas edit mask to be used for the field. Determines how numeric fields are to be edited. Valid values: E1...E15.  Edit mask is supported for compatibility reasons and for documentation purposes only. See the section <b>Format Buffer Syntax</b> in the <b>Adabas 5 Command Reference documentation</b> for more information.
Security access level	The Adabas access security level of the field.
Security update level	The Adabas update security level of the field.

## Field Procedure

```

13:50:45          ***** P R E D I C T 4.2.2 *****          2002-07-31
                        - Modify Field -
Field ID ..... A_L10                      Added 2002-07-31 at 12:10
File ID ..... PD-DB2                      Modified 2002-07-31 at 13:40

Ty L Field name                               F Cs Length  Occ  D U DB N NAT-1
*- - - - - * - - - - - * - - - - - * * - - * - - - -
  1 A_L10                                     AL    100.0      D  AC N

      +-----+
      ! Procedure name .....
      ! Procedure parameter
      !
      !
      !
      !
      !
      !
      !
      !
      !
      +-----+

EDIT: * Owner: N Desc: N Veri: N
    
```

Attributes	
Procedure name	Name of a field procedure (DB2 parameter FIELDPROC). See the <b>Natural for DB2 documentation</b> for more details.
Procedure parameter	Parameters passed to the field procedure. See the <b>Natural for DB2 documentation</b> for more details.

## Derived Field Expression

```

> + EL: A5 L: 1 S: 1
All .....1... Expression for derived field...5....+....6....+....7..

*
* Field expression of a derived field
*
USER-TABLE1-SALARY * 12 /* SALARY FOR 12 MONTHS
+ CORRELATOR2-BONUS
    
```

Applicable only to fields of type DV in files of the following types:

B	Adabas SQL views
E	DB2 views
IV	Intermediate view
JV	INGRES view
OV	ORACLE view
X	General SQL
XV	INFORMIX view
YV	SYBASE view

The expression used to derive the field is to be edited using one of the following depending on the your settings in the Profile > Handling screen:

- the Natural-based Subquery Editor, or
- the Software AG Editor

The editor can also be called with

- function Edit Field expression (Code Y) in the Field Maintenance Menu, or
- command EDIT ELEMENT EXPRESSION <file-id> <field-id>

See the section Editors in Predict in the **Predict Reference documentation** for more information.

The subquery of the file that contains the current field can specify a correlation name for any file whose fields it uses. The name of each field referenced in the expression must be qualified (preceded) by the correlation name of the file from which the field is taken, if a correlation name has been specified for that file, or the ID of the file from which the field is taken, if no correlation name has been specified for it. The expression can include both comment lines (with /\*, \* or \*\* in the first two columns) and line comments (preceded by /\*).

Example: A field which contains the annual salary:

```

*
* Field expression of a derived field
*
USER-TABLE1-SALARY * 12 /* SALARY FOR 12 MONTHS
+ CORRELATOR2-BONUS
    
```

# Index Definition - DB2

Index fields (descriptor type D, F or P) in a file of type D (DB2 table), are defined in the screen below.

## Screen 1

```

13:38:13          ***** P R E D I C T 4.2.2 *****          2002-07-31
                    - Modify Field -
Field ID ..... W_DB2          Modified 2002-07-31 at 13:38
File ID ..... HEB-DB2          by HNO

Definition of Index
Index name ..... ZZHEB-W_DB2
Cluster index ..... N (Y/N)          Piece Size ...* 0
Close option ..... Y (Y/N)
Bufferpool .....* BP0
Copy ..... N (Y/N)

Default values of using- and free-block
VSAM catalog name ..
Storagespace .....*
Primary alloc .....
Secondary alloc.....
Erase opt ..... (Y/N)
Free pages .....
Percentage free ....
GBPCACHE .....* Default

EDIT:  Owner: N * Desc: N  Veri: N
    
```

Attributes	
Definition of Index	
Index name	The name of the DB2 index. See Key or Index Fields in SQL Files - Superfields. A read-only field.
Cluster index	<b>Y</b> The records (rows) in the DB2 table are stored in the sequence of this index. Valid for max. one index per table. A table contained in a partitioned tablespace must have one index marked as a clustered index.
Bufferpool	The buffer pool associated with the index.
Close option	<b>Y</b> The data sets supporting this index are closed when nobody uses the index.
Copy	Indicates whether the copy utility is allowed for the index.  <b>Y</b> Full image or concurrent copies allowed.  <b>N</b> Full image or concurrent copies not allowed.

Piece size	The maximum piece size for a non-partitioned index. Valid values: 0, 256, 512, 1024, 2048, 4096, 8192, 16384, 32768, 65536, 131072, 262144, 524288, 1048576, 2097152, 4194304.
<b>Default Values of Using- and Free-Block</b>	
The parameter VSAM catalog name must be specified if data sets are already defined for the index. Attributes marked * apply if data sets for the index have yet to be defined by DB2. The parameters Free pages and Percentage free apply in both cases.	
VSAM catalog name	Name of the VSAM catalog for the index.
Storagespace	Storagespace where DB2 defines the data sets for the index (optional). If no storagespace is specified, DB2 uses the default storagespace.
Primary alloc	Minimum primary space allocation (in Kbyte) for DB2-defined index data sets. A value specified in this field is stored only if the attribute storage group has been specified.
Secondary alloc	Minimum secondary space allocation (in Kbyte) for DB2-defined index data sets. A value specified in this field is stored only if the attribute storage group has been specified.
Erase opt	<b>Y</b> The DB2-defined data sets are to be erased (filled with nulls) when the index is dropped.  A value specified in this field is stored only if the attribute Storage group has been specified.
Free pages	A number from 0 to 255 which indicates that one page is to be left free each time this number of pages is used when the load operation creates index entries or when the index is reorganized. Zero indicates that no pages are to be left free.
Percentage free	A number from 0 to 99: the percentage of each page to be left as free space when index entries are created by a load operation or when the index is reorganized.
GBPCACHE	Only relevant in a data sharing environment. Specifies what pages of the table space or partition are written to the group buffer pool. Leave this field blank or enter:  <b>C</b> Changed. Only pages that have been changed are written to the group buffer pool.  <b>A</b> All pages are written.  <b>N</b> No pages are written to the group buffer pool.

## Screen 2

For a partitioned index (a cluster index for a table in a partitioned table space), the following screen is displayed for every two partitions. Each partition can then be defined in accordance with the Default values of using- and free-block (see description above).

```

13:41:51          ***** P R E D I C T 4.2.2 *****          2002-07-31
                    - Modify Field -

Field ID ..... EINS                      Modified 2002-07-31 at 09:21
File ID ..... SMR-D_MIT_INDEX              by SMR

----- Definition of partitioned Index -----
Partition 1
Value ..... 'a','b','c'

VSAM catalog name .....
Storagespace .....* SYSDEFLT
Primary allocation ... 12                  GBPCACHE .....*
Secondary allocation .. 12                 Free pages .....
Erase option ..... N (Y/N)                Percentage free .. 10
Partition 2
Value ..... 'b','a','c'

VSAM catalog name .....
Storagespace .....* SYSDEFLT
Primary allocation ... 12                  GBPCACHE .....*
Secondary allocation .. 12                 Free pages .....
Erase option ..... N (Y/N)                Percentage free .. 10
EDIT:  Owner: N  Desc: N * Veri: Y          MORE * Partition: Y
    
```

Attributes	
Value	The highest value of the index key in this partition. At least one constant must be used and as many constants as there are columns in the key can be specified. The concatenation of all the constants is the highest value of the key in this partition of the index.  <b>Note:</b> No checking is performed here.

All other attributes are described above.

## Default value

This additional attribute is only applicable for fields in

- Sybase tables with Null value option set to R and Null default option set to Y.
- Adabas D tables, DB2 tables, Informix and Oracle tables with Null value option set to R or U and Null default option set to Y.

```

13:09:33          ***** P R E D I C T 4.2.2 *****          2002-07-31
                    - Modify Field -
Field ID ..... TESTFIELD                      Modified 2002-07-31 at 13:09
File ID ..... HNO-YT                          by HNO

Ty L Field ID          F Cs Length  Occ  D U DB N Df NAT-1
*- - - - -             * - * - - - - -  - - - - * * - - * * - - - -
   1 TESTFIELD        A  B    10.0          AA R Y

Default name .....
Default expression .....<

>
    
```

Attribute	
Default name	<p>The default specified here is used in the CREATE TABLE statement. SYBASE naming conventions apply. See Naming Conventions for SQL Objects.</p> <p><b>Note:</b> For SYBASE, a default is an object in its own right. For other SQL systems, a default value is specified in the CREATE TABLE statement (not null with default default_expression). For Informix no default name is allowed.</p>
Default expression	<p>An SQL expression can be specified between the angled brackets. This expression determines the default value, for example a constant or function. If specified, this value is always used by the function Generate CREATE statement.</p>

## Constraint name

Depending on the field definition, up to four constraint names can be specified.

```

13:35:45          ***** P R E D I C T 4.2.2 *****          2002-07-31
                    - Modify Field -
Field ID ..... TESTFIELD                      Modified 2002-07-31 at 09:34
File ID ..... HNO-YT                          by HNO

Ty L Field ID          F Cs Length  Occ  D U DB N Df NAT-1
*- - - - -             * - * - - - - -  - - - - * * - - * * - - - -
   1 TESTFIELD        A  B    10.0          P U AA R Y

Attributes          Constraint name

Check constraint
Primary key
Unique
Null/Not null
    
```

Attributes	
Check constraint	Constraint name in the respective SQL system for the fact that a linked verification of status S exists.
Primary key	Constraint name for the fact that the field is a primary key.
Unique	Constraint name for the fact that a unique constraint exists (indicated with U in column Unique option of the field object in Predict).
Null/Not null	Constraint name for the fact that the Null or Not null default option is set to Y.

## Identity definition

This additional attribute is only applicable for fields in DB2 tables. Field type must be

- QN (Row ID) or
- a numeric field.

```

13:35:45          ***** P R E D I C T  4.2.2  *****                2002-07-31
                                - Modify Field -
Field ID ..... ROWI                      Modified 2002-07-31 at 09:34
File ID ..... HEB-DB2                      by HEB

Ty L Field ID                F Cs Length  Occ  D U DB N Df NAT-1
* - - - - - * - - - - - * - * - - - - - * * - - * * - - - - -
QN 1 ROWID                    A          40.0    N  U  A  N  R  N

Generated .....* A Always

Identity ..... (Y/N)
Start value .....
Increment value .
Cache .....
    
```

<b>Attributes</b>	
Generated	Indicates whether DB2 generates values for the column. Valid values:  <b>A</b> Always  <b>D</b> By default  <b>blank</b> None
Identity	Specifies whether the column is an identity column for the table. Valid values:  <b>Y</b> Yes  <b>N</b> No
Start value	Specifies the first value for the identity column.
Increment value	Specifies the interval between consecutive values of the identity column.
Cache	Specifies whether to keep preallocated values in memory.