UPDATE - SQL UPDATE - SQL

# **UPDATE - SQL**

This chapter covers the following topics:

- Function
- Syntax 1 Searched UPDATE
- Syntax 2 Positioned UPDATE
- Examples

For an explanation of the symbols used in the syntax diagram, see *Syntax Symbols*.

Belongs to Function Group: Database Access and Update

See also the following sections in the *Database Management System Interfaces* documentation:

- *UPDATE SQL* in the *Natural for DB2* part.
- *UPDATE SQL* in the *Natural SQL Gateway* part.
- *UPDATE SQL* in the *Natural for SQL/DS* part.

### **Function**

The SQL UPDATE statement is used to perform an UPDATE operation on either rows in a table without using a cursor ("searched" UPDATE) or columns in a row to which a cursor is positioned ("positioned" UPDATE).

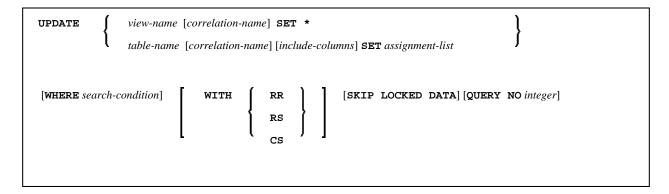
Two different structures are possible.

## Syntax 1 - Searched UPDATE

The "Searched" UPDATE statement is a stand-alone statement not related to any SELECT statement. With a single statement you can update zero, one, multiple or all rows of a table. The rows to be updated are determined by a <code>search-condition</code> that is applied to the table. Optionally, view and table names can be assigned a <code>correlation-name</code>.

#### Note:

The number of rows that have actually been updated with a "searched" UPDATE can be ascertained by using the system variable \*ROWCOUNT.



For an explanation of the symbols used in the syntax diagram, see *Syntax Symbols*.

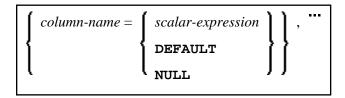
Syntax Element Description - Syntax 1:

Syntax Element	Description
view-name	View Name:
	Refers to the name of a Natural view as defined in the DEFINE DATA statement. For further information, see <i>view-name</i> (in the section <i>Basic Syntactical Items</i> ).
correlation-name	Correlation Name:
	The item <i>correlation-name</i> represents an alias name for a <i>table-name</i> .
	For further information, see correlation-name (in the section Basic Syntactical Items).
include-columns	Include Columns Clause:
	Specifies a set of columns that are included, along with the columns of tables-name in the result table of the UPDATE statement, when it is nested in the FROM clause of a SELECT statement. The included columns are appended to the end of the list of columns. For further details, see <i>include-columns</i> .
SET	SET Clause:
	If a view has been specified for updating, an asterisk (*) has to be specified in the SET clause, because all columns of the view must be updated.
	If a table has been specified for updating, the SET clause must contain either an <code>assignment-list</code> or the name of the view which contains the columns to be updated.
assignment-list	Assignment List: See Assignment List below.

Assignment List UPDATE - SQL

Syntax Element	Description	Description		
WHERE search-condition	WHERE Clause:			
search-condition	This clause is updated.	used to specify the selection criteria for the rows to be		
	If no WHERE	clause is specified, the entire table is updated.		
WITH	WITH Clause:			
	This clause allows the explicit specification of the isolation level used when locating the row to be updated. For detailed information, see <i>WITH Clause - Isolation Level</i> in the description of the SELECT statement.			
	CS	Cursor Stability		
	RR	Repeatable Read		
	RS	Read Stability		
SKIP LOCKED DATA	SKIP LOCK	SKIP LOCKED DATA Clause:		
	Specifies that rows are skipped when incompatible locks are he the row by other transactions.			
QUERYNO integer	QUERYNO	QUERYNO Clause:		
	This clause allows you to explicitly specify the number to be use EXPLAIN output and trace records for this statement. The numused as QUERYNO column in the PLAN_TABLE for the rows the contain information on this statement.			

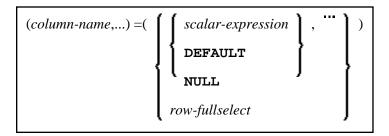
### **Assignment List**



In an assignment-list, you can assign values to one or more columns. A value can be a scalar-expression, DEFAULT or NULL. For further information, see Scalar Expressions.

If the value NULL has been assigned, it means that the addressed field is to contain no value (not even the value "0" or "blank").

Alternative:



Syntax Element Description:

Syntax Element	Description
column-name	Column Name:
	Specifies the name of a column of the result table of the MERGE statement that is not the same name as another include column or a column in the target table.
DEFAULT	DEFAULT Option:
	Specifies that the default value is used based on how the corresponding column is defined in the table.
NULL	NULL Option:
	Specifies the null value as the new value of the column.
	If the value NULL has been assigned, it means that the addressed field is to contain no value (not even the value 0 or "blank").
row-fullselect	Row Full Select Option:
	Specifies a full select that returns a single row. The column values are assigned to the corresponding column-names.

# **Syntax 2 - Positioned UPDATE**

The "positioned" UPDATE statement always refers to a cursor within a database loop. Thus, the table or view referenced by a positioned UPDATE statement must be the same as the one referenced by the corresponding SELECT statement; otherwise an error message is returned. A positioned UPDATE cannot be used with a non-cursor selection.

Common Set Syntax:



Extended Set Syntax:

Examples UPDATE - SQL

Syntax Element Description - Syntax 2:

Syntax Element	Description
view-name	Natural View:
	Refers to the name of a Natural view as defined in the DEFINE DATA statement; see also view-name (in the section Basic Syntactical Items).
SET *	SET Clause:
SET assignment-list	If a Natural view has been specified for updating, an asterisk (*) has to be specified in the SET clause, because all columns of the view must be updated.
	If a table has been specified for updating, the SET clause must contain either an assignment-list or the name of the view which contains the columns to be updated.
WHERE CURRENT OF CURSOR	Statement Reference:
(r)	The (r) notation is used to reference the statement which was used to select the row to be updated. If no statement reference is specified, the UPDATE statement is related to the innermost active processing loop in which a database record was selected.
FOR ROW OF ROWSET	FOR ROW OF ROWSET Clause:
	This clause belongs to the SQL Extended Set.  The optional FOR ROW OF ROWSET clause for positioned SQL UPDATE statements specifies which row of the current rowset has to be updated. It should only be specified if the UPDATE statement is related to a SELECT statement which uses rowset positioning and which has column arrays in the INTO Clause.
	If this clause is omitted, all rows of the current rowset are updated by the values in the assignment-list.
	This clause cannot be specified if view-name SET * is specified.

# **Examples**

- Example 1 Searched UPDATE
- Example 2 Searched UPDATE with assignment-list

- Example 3 Positioned UPDATE
- Example 4 Positioned UPDATE with assignment-list

### **Example 1 - Searched UPDATE**

```
DEFINE DATA LOCAL

1 PERS VIEW OF SQL-PERSONNEL

2 NAME

2 AGE
...
END-DEFINE
...
ASSIGN AGE = 45
ASSIGN NAME = 'SCHMIDT'
UPDATE PERS SET * WHERE NAME = 'SCHMIDT'
```

#### **Example 2 - Searched UPDATE with assignment-list**

```
DEFINE DATA LOCAL

1 PERS VIEW OF SQL-PERSONNEL

2 NAME

2 AGE
...
END-DEFINE
...
UPDATE SQL-PERSONNEL SET AGE = AGE + 1 WHERE NAME = 'SCHMIDT'
...
```

### **Example 3 - Positioned UPDATE**

```
DEFINE DATA LOCAL

1 PERS VIEW OF SQL-PERSONNEL

2 NAME

2 AGE
...

END-DEFINE
...

SELECT * INTO PERS FROM SQL_PERSONNEL WHERE NAME = 'SCHMIDT'
COMPUTE AGE = AGE + 1
UPDATE PERS SET * WHERE CURRENT OF CURSOR
END-SELECT
...
```

### **Example 4 - Positioned UPDATE with assignment-list**

```
DEFINE DATA LOCAL

1 PERS VIEW OF SQL-PERSONNEL

2 NAME

2 AGE
...
END-DEFINE
...
SELECT * INTO PERS FROM SQL-PERSONNEL WHERE NAME = 'SCHMIDT'
UPDATE SQL-PERSONNEL SET AGE = AGE + 1 WHERE CURRENT OF CURSOR
END-SELECT
...
```