

NDB - Procedure Maintenance

As described below, this function does not apply to all DB2 versions:

From DB2 UDB, the handling of stored procedures in DB2 has changed, and stored procedures can no longer be maintained with the Procedure Maintenance function. Instead, for maintaining stored procedures, DB2 provides the new statements CREATE PROCEDURE and ALTER PROCEDURE as described in the relevant DB2 literature by IBM.

This section covers the following topics:

- Invoking Procedure Maintenance
- Insert a Stored Procedure
- Modify a Stored Procedure
- Insert Data Areas
- Save PARMLIST as Natural Object
- List Stored Procedures
- Delete a Stored Procedure

See also Natural Stored Procedures in the section Statements and System Variables.

Invoking Procedure Maintenance

To invoke the Procedure Maintenance function

- Enter function code "P" on the Natural Tools for DB2 Main Menu.

The Procedure Maintenance menu is displayed:

```

11:34:09          ***** NATURAL TOOLS FOR DB2 *****          2006-05-24
                    Procedure Maintenance

                    Code Function

                    I   Insert New Procedure
                    D   Delete Procedure
                    M   Modify Procedure
                    L   List Procedures
                    ?   Help
                    .   Exit

                    Code .. _   Procedure Name .. _____
                                Authid ..... _____
                                Luname ..... _____

Command ==>
Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12--
      Help           Exit                                     Canc
    
```

The following functions are available:

| Code | Description |
|------|---|
| I | Inserts a new DB2 stored procedure into the SYSIBM.SYSPROCEDURES table. |
| D | Deletes one or several DB2 stored procedure(s). |
| M | Modifies a DB2 stored procedure. |
| L | Lists all DB2 stored procedures or a part of them. |

The following parameters can be specified:

| Parameter | Description |
|----------------|--------------------------------------|
| Procedure Name | Specifies the name of the procedure. |
| Authid | Specifies the authorization ID. |
| Luname | Specifies the LU name. |

Insert a Stored Procedure

 To insert a new stored procedure into the catalog

- Enter function code "I" on the Procedure Maintenance menu.

The following screen is displayed:

```

14:53:28          ***** NATURAL TOOLS FOR DB2 *****          2006-05-24
                    - Insert Procedure -

PROCEDURE = DBA _____          LOADMOD = _____
AUTHID    = _____          LINKAGE = _ (N,blank)
LUNAME    = _____          COLLID = _____
ASUTIME   = _____          STAYRESIDENT = _ (Y,blank)
IBMREQD   = _ (Y/N)          RESULT_SETS = _____
PGM_TYPE  = _ (M/S)          EXTERNAL_SECURITY = _ (Y/N)
WLM_ENV   = _____          COMMIT_ON_RETURN = _ (Y/N)
LANGUAGE  = _____ (ASSEMBLER,PLI,COBOL,C)

RUNOPTS   = ' _____
           _____
           _____
           _____
           _____
PARMLIST: - define PARMLIST: N (Y/N)

Command ==>

Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
      Help  Error Exit  Exec                               Canc
    
```

Here, you can specify the fields of the new stored procedure. The fields PROCEDURE, LOADMOD, IBMREQD and LANGUAGE are mandatory.

▶ To define a parameter list

- Enter "y" in the field "Define PARMLIST".

You can then enter the parameter fields in a separate screen.

The first column in the parameter screen is used for editing purposes, possible commands are "I" and "D" for insertion and deletion. In the second column, the name of the parameter can be entered. The third column is mandatory and specifies the type of the parameter. Entering "?" displays a list of possible types from which one type may be selected. In the next column, a length can be entered. The Natural for DB2 checks whether the specified type and length value fit together. The next columns define the subtype and the in/out value.

When all parameters are specified, press ENTER to return to the Insert Procedure screen.

To actually insert the stored procedure and add it to the catalog, press PF4. If pressing PF4 results in an error from DB2, press PF2 to display the error information.

Modify a Stored Procedure

▶ To modify a stored procedure in the catalog

- Enter function code "M" in the Procedure Maintenance menu together with a procedure name as unique identifier.

The following screen is displayed:

```

14:55:57          ***** NATURAL TOOLS FOR DB2 *****          2006-05-24
                    - Modify Procedure -

PROCEDURE = DBAPROC_____          LOADMOD = DBAMOD___
AUTHID    = _____          LINKAGE = _ (N,blank)
LUNAME    = _____          COLLID = _____
ASUTIME   = _____          STAYRESIDENT = _ (Y,blank)
IBMREQD   = Y (Y/N)          RESULT_SETS = _____
PGM_TYPE  = _ (M/S)          EXTERNAL_SECURITY = _ (Y/N)
WLM_ENV   = _____          COMMIT_ON_RETURN = _ (Y/N)
LANGUAGE  = C_____ (ASSEMBLER,PLI,COBOL,C)

RUNOPTS   = ' _____
           _____
           _____
           _____
           _____ '

PARMLIST: X display PARMLIST: N (Y/N)

Command ==>

Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
      Help  Error Exit  Exec                               Canc

```

▶ To display a list of stored procedures

1. Proceed as above but do not enter a procedure name nor use the asterisks "*" notation.

The list of stored procedures will be displayed.

2. From this list select a specific stored procedure with the line command "MO".

The stored procedure is then displayed for modification.

3. Proceed as described in section Insert a Stored Procedure above.

Insert Data Areas

Fields of data areas can be inserted automatically to SYSPROCEDURES.

Proceed as described in the section Insert a Stored Procedure or Modify a Stored Procedure .

```

14:57:16          ***** NATURAL TOOLS FOR DB2 *****          2006-05-24
+-----+
!  PARMLIST =
!
!  -- _____ ( _____ ) FOR _____ DATA _____ !
!  -- _____ ( _____ ) FOR _____ DATA _____ !
!  -- _____ ( _____ ) FOR _____ DATA _____ !
!  -- _____ ( _____ ) FOR _____ DATA _____ !
!  -- _____ ( _____ ) FOR _____ DATA _____ !
!  -- _____ ( _____ ) FOR _____ DATA _____ !
!  -- _____ ( _____ ) FOR _____ DATA _____ !
!  -- _____ ( _____ ) FOR _____ DATA _____ !
!  -- _____ ( _____ ) FOR _____ DATA _____ !
!  -- _____ ( _____ ) FOR _____ DATA _____ !
!
+-----+
!  cmd parm-name parm-type          length          subtype          inout          !
!
!  I/ optional  mandatory          blank/          blank/          !
!  D           SBCS/              IN/            !
!  I=insert    MIXED/             OUT/           !
+-----+
Command ==>
Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
          Exit  Parml Data          -          +          Canc
    
```

In the PARMLIST screen (above,) press PF5/Data to display the following window.

```

14:57:16          ***** NATURAL TOOLS FOR DB2 *****          2006-05-24
+-----+
!  PARMLIST =
!
!  -- _____ ( _____ ) FOR _____ DATA _____ !
!  -- _____ ( _____ ) FOR _____ DATA _____ !
!  -- _____ ( _____ ) FOR _____ DATA _____ !
!  -- _____ ( _____ ) FOR _____ DATA _____ !
!  -- _____ ( _____ ) FOR _____ DATA _____ !
!  -- _____ ( _____ ) FOR _____ DATA _____ !
!  -- _____ ( _____ ) FOR _____ DATA _____ !
!  -- _____ ( _____ ) FOR _____ DATA _____ !
!  -- _____ ( _____ ) FOR _____ DATA _____ !
!  -- _____ ( _____ ) FOR _____ DATA _____ !
!
+-----+
!
!  _____ !
!  _____ !
!  _____ ! Library : _____ !
!  _____ ! Member  : _____ !
!  _____ !
!  _____ !
!  _____ ! Enter Library and LDA/PDA name !
!  _____ ! and press enter to insert      !
!  _____ ! press PF3 to cancel           !
+-----+
!  cmd parm-name parm-type          length          subtype          inout          !
!
!  I/ optional  mandatory          blank/          blank/          !
!  D           SBCS/              IN/            !
!  I=insert    MIXED/             OUT/           !
+-----+
Command ==>
Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
          Exit  Parml Data          -          +          Canc
    
```

Enter the library name and the name of the LDA or PDA to be inserted into the PARMLIST definition of the stored procedure. A maximum of 100 parameters can be inserted.

The parameter STCB will be generated automatically at the top of the PARMLIST.

The individual field names of the LDA or PDA are truncated to the first 8 characters in the PARMLIST parmnames (DB2 restriction).

```

14:56:53                Page    2                                2006-05-24
+-----+-----+-----+-----+-----+-----+
!  PARMLIST =                                                    !
- !                                                                !
!  _ STCB_____ VARCHAR_____ ( 794__ ) FOR _____ DATA _____ !
!  _ NAME_____ CHAR_____ ( 18__ ) FOR _____ DATA _____ !
!  _ CREATOR_ CHAR_____ ( 8__ ) FOR _____ DATA _____ !
!  _ TYPE_____ CHAR_____ ( 1__ ) FOR _____ DATA _____ !
!  _ DBNAME__ CHAR_____ ( 8__ ) FOR _____ DATA _____ !
!  _ TSNAME__ CHAR_____ ( 8__ ) FOR _____ DATA _____ !
!  _ DBID___ SMALLINT_____ ( _____ ) FOR _____ DATA _____ !
!  _ OBID___ SMALLINT_____ ( _____ ) FOR _____ DATA _____ !
!  _ COLCOUNT SMALLINT_____ ( _____ ) FOR _____ DATA _____ !
!  _ EDPROC__ CHAR_____ ( 8__ ) FOR _____ DATA _____ !
! ----- !
!  cmd parm-name parm-type          length      subtype      inout  !
! ----- !
!  I/ optional  mandatory          blank/      blank/  !
!  D              SBCS/              IN/        !
!  I=insert      MIXED/              OUT/        !
+-----+-----+-----+-----+-----+

```

Save PARMLIST as Natural Object

You can store the field definitions of the PARMLIST in a Natural program which you can stow and modify. (It is not necessary to enter the field definitions manually.)

To do so, press PF4/Parml.

The field definitions are converted to a Natural object. The Natural object is saved on FUSER in the user library you specified.

The Natural object can be used as input for the LDA editor after the stow.

List Stored Procedures

To display a list of stored procedures

- Enter function code "L" in the Procedure Maintenance menu.

The following screen is displayed:

```

11:17:05          ***** NATURAL TOOLS FOR DB2 *****                2006-05-24
PROCEDURE PROC*.SAG.*                S 01          Row 0 of 3 Columns 041075
====>                                Scroll ==> PAGE
          PROCEDURE  AUTHID  LUNAME      LOADMOD L          COLLID  LANGU
** ***** top of data*****
---          PROC1    SAG          MODULE1              ASSEM
---          PROC2    SAG          MODULE2
---          PROC3    SAG          MODULE3
** ***** bottom of data*****

Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
      Help      Exit      Rfind      -      +      <      >      Canc

```

The screen contains a list of all stored procedures in the catalog.

To display a part of the procedures

- use the asterisks "*" notation.

The following line commands are available:

| Command | Description |
|---------|--|
| LI | Display the stored procedure in detail |
| MO | Modify the stored procedure |
| DE | Delete the stored procedure |

Delete a Stored Procedure

To delete a stored procedure from the catalog:

- Enter function code "D" in the Procedure Maintenance menu together with a procedure name as unique identifier.

The procedure is then deleted.

If you do not enter a procedure name or if you use the "*" notation, a screen with a list of procedures appears, where you can enter the line command "DE" to delete a procedure.