

Re: COBOL stored procedure for DB2

Source: <http://coding.derkeiler.com/Archive/Cobol/comp.lang.cobol/2007-04/msg00205.html>

- *From:* "pompeyoc" <catipoe@xxxxxxxxxxxxxxxxxxxxxxxxxxxx>
 - *Date:* 13 Apr 2007 18:52:34 -0700
-

On Apr 13, 9:12 pm, Simon Tobias <Simon.Tob...@xxxxxxxxxxxxxxxxxxxxxxxxxxxx> wrote:

Hello pompeyoc,

Great, I'm glad the SP is at least being executed now!

Regarding how you precompile the app, you must specify target mfcob to db2 prep, rather than target ibmcob.

Have you also confirmed that, prior to executing the CALL statement, the host variables specified within the client app have the appropriate values?

Assuming that the app is not picking up the parameters correctly, could you please repost the snippets showing :

1. Client code --- the CALL statement being used.
2. SP code --- the LINKAGE SECTION content and PROCEDURE DIVISION USING ... statement.
3. The DB2 CREATE PROCEDURE statement.

Regarding (3), for the sample shipping with DB2 itself, they use :

```
DYNAMIC RESULT SETS 0
LANGUAGE COBOL
PARAMETER STYLE GENERAL
NO DBINFO
FENCED
NOT THREADSAFE
MODIFIES SQL DATA
PROGRAM TYPE SUB
```

I noticed that you had 'no sql' in your earlier email:

```
db2 "create procedure dbipas.spprog (in policy char(10), out plan
char(3)) dynamic result sets 0 no sql language cobol external name
'spprog' parameter style general program type sub"
```

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You should be specifying either 'READS SQL DATA' or 'MODIFIES SQL DATA' depending on the SQL statements actually being executed within your SP.

SimonT.

On Apr 12, 9:05 pm, Simon Tobias
<Simon.Tob...@xxxxxxxxxxxxxxxxxxxxxxxxxxxx>
wrote:

Hello pompeyoc,

I've gone back to the IBM documentation, to remind myself of the requirements for building and executing COBOL SP's using Object COBOL 4.1, rather than Server Express (which I'm more familiar with).

If you refer to chapter 6
[offftp://ftp.software.ibm.com/ps/products/db2/info/vr7/pdf/letter/db2axe...](http://ftp.software.ibm.com/ps/products/db2/info/vr7/pdf/letter/db2axe...)

, it covers a few steps required to set up the db2 environment.

Specifically

:

"1. Before building a stored procedure on AIX 4.2.1 using the Micro

Focus 4.1

compiler, execute the following commands:

```
db2stop
```

```
db2set DB2LIBPATH=$LIBPATH
```

```
db2set DB2ENVLIST="COBDIR LIBPATH"
```

```
db2set
```

```
db2start
```

Ensure that db2stop stops the database and LIBPATH is set properly in

your

shell environment. The last db2set command is issued to display your

settings: make sure DB2LIBPATH and DB2ENVLIST are set correctly."

I suspect that this the cause of your SQL1131N error. The stored

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procedure
is loaded under the control of DB2 --- as opposed to the
client-side
environment
--- hence DB2 will need to inherit the COBOL environment
for the
purposes
of executing the stored procedure.
Regards,
SimonT.

On Apr 11, 11:22 pm, Simon Tobias
<Simon.Tob...@xxxxxxxxxxxxxxxxxxxxxxxxxxxx>
wrote:

Hi.

IBM do provide COBOL
samples, which include
demos of how to
build/deploy/execute stored
procedures.

If you have the Application
Development Client
installed --- which
I'm
guessing
you have ! --- you should
find these demos under the
samples/cobol_mf
directory.
The makefile will include
appropriate build
instructions for the
stored procedure,
as well as the client app. I
would look at using the
incli
(client)
and
inpsrv (Stored Procedure)
demo to make sure things
are working ok
for

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you,
especially with how the SP
itself is linked.
Unfortunately I don't have a
UDB 7.2 installation on
AIX to hand to
confirm the cob command
used for creating the SP
module.
SimonT.

I am trying
to learn how
to use
stored
procedures
written in
COBOL
so I wrote 2
small
programs to
test it out:
the stored
procedure
and the the
calling
program. I
have no
problems
compiling
them but
when the
calling
program
enters the
SP, it either
hangs or
gives
me sqlcode
-1131.

We are on
AIX 5.2 (I
think)
running
DB2 UDB
ver 7.2 and

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MF
COBOL
4.1.

Below are
the
programs I
wrote:

```
Calling  
program  
(spcaller.sqb)  
identification  
division.  
program-id.  
spcaller.  
environment  
division.  
input-output  
section.  
file-control.  
working-storage  
section.  
exec sql  
begin  
declare  
section  
end-exec.  
01  
work-area.  
05  
lnk-stored-proc  
pic x(12).  
05  
lnk-policy  
pic x(10).  
05 lnk-plan  
pic x(3).  
exec sql end  
declare  
section  
end-exec.  
exec sql  
include  
sqlca  
end-exec.  
exec sql
```

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```
include
sqlda
end-exec.
procedure
division.
00000-main-rtn.
exec sql
connect to
noadmdb
user dbmssi
using
dbmssi
end-exec
exec sql set
schema
dbipas
end-exec
initialize
work-area
accept
lnk-policy
from
command-line
move
"sprog" to
lnk-stored-proc
display
"calling
sprog"
exec sql
call
:lnk-stored-proc
(:lnk-policy,
:lnk-plan)
end-exec
if sqlcode
not= 0
display
'error in sp
= ' sqlcode
else
display
"policy
number : "
lnk-policy
display
"plancode :
" lnk-plan
end-if
exec sql
connect
```

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reset
end-exec
stop run.
The
database
name is
"noadmdb"
and the
schema is
"dbipas" but
the
account
running the
program is
"dbmssi".
Our DBA
says this
account
has
all
privileges
of the
instance
except for
commands
that alter the
database/tables
such as
DROP.
SP
program:
(spprog.cbl)
identification
division.
program-id.
spprog.
environment
division.
input-output
section.
file-control.
data
division.
working-storage
section.
linkage
section.
01
lnk-policy
pic x(10).
01 lnk-plan

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```
pic x(3).
procedure
division
using
lnk-policy
lnk-plan.
00000-main-rtn.
move
"XXX" to
lnk-plan
goback.
This used to
be a little
longer and
had
embedded
SQL
commands
in
it
but I
removed
them to try
and figure
out where
the problem
was.
I compiled
the sp
program
using the
commands:
cob -c -x
spprog.cbl
cob -x -o
spprog
spprog.o
-Q
-bnoentry
-Q
-bE:oadmi.exp
-Q -bI:
$DB2PATH/lib/db2g.imp
-L$DB2PATH/lib
-ldb2
-ldb2gmf
...and
copied the
executable
file spprog
to the
```

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\$INSTHOME/sql/lib/
function
directory. I
then
prepped/bound/compiled
the calling
program
using the
commands:
db2 prep
spcaller.sqb
bindfile
target
ibmcob
db2 bind
spcaller.bnd
cob -c -x
spcaller.cbl
cob -x -o
spcaller
spcaller.o
-ldb2
-ldb2gmf
-L\$DB2PATH/lib

I also tried
using
"target
mfcob" for
db2 prep
but with the
same
results.

I then
created the
procedure
with the
CREATE
PROCEDURE
command
as
follows:
db2 "create
procedure
dbipas.spprog
(in policy
char(10),
out plan
char(3))
dynamic
result sets 0
no sql

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```
language
cobol
external
name
'spprog'
parameter
style
general
program
type sub"
My
co-worker
also wrote a
VB
program to
run the SP
but it also
hangs
when it tries
to call it:
Option
Explicit
Private Sub
cmdOK_Click()
txtPlan.Text
=
ExecSP(txtPolNo.Text)
End Sub
Private
Function
ExecSP(ByVal
sPolno As
String) As
String
Dim
cmCallSP
As
Command
Dim
parmSP As
Parameter
Dim
sSQLState
As String
Dim
g_sConnection
As String
g_sConnection
=
"DSN=NONADMI;UID=dbmssi;PWD=dbmssi"
Screen.MousePointer
```

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```
=
vbHourglass
Set
cmCallSP =
New
Command
cmCallSP.CommandText
= "spprog"
cmCallSP.CommandType
=
adCmdStoredProc
cmCallSP.ActiveConnection
=
g_sConnection
Set parmSP
=
cmCallSP.CreateParameter("policy",
adChar,
adParamInput,
10, sPolno)
Call
cmCallSP.Parameters.Append(parmSP)
Set parmSP
=
cmCallSP.CreateParameter("plan",
adChar,
adParamOutput,
3)
Call
cmCallSP.Parameters.Append(parmSP)
cmCallSP.Execute
ExecSP =
cmCallSP.Parameters("plan").Value
End
Function
Can anyone
tell me what
I'm doing
wrong? We
have tons of
COBOL
programs
that I would
like to use
as stored
procs so
they can be
called by
VB6
programs
running on
```

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Windows
XP or 2000.
Thanks in
advance for
your help.–
Hide quoted
text –

– Show quoted text –

Hi, Simon. Thanks for taking the time to
reply to my problem.

I actually got the db2 prep/bind and cob
commands and compiler
options from the bldapp and bldsrv files in
the samples directory
but I didn't know about the make file so I
tried following the steps
there as you suggested. It's pretty much the
same as what I did
before except for the wrapsrv command. I
did the wrapsrv command and
changed all references to my sp from
"spprog" to
"spprog!spprog_wrap" including the
EXTERNAL NAME in my CREATE
PROCEDURE command but still got the
SQLCODE –1131. Am I supposed to
invoke the CREATE WRAPPER command
for this? Do I need to include the
checkerr program when I link it?

Thanks again!

Pompeyo C– Hide quoted text –

– Show quoted text –

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You are a genius! I followed your instructions and my stored procedure is now running. I added sql commands to insert rows into a dummy table and it worked fine. My only problem is the SP is not getting the IN variable passed by the calling program and the calling program is not getting the value of the OUT variable set by the SP. Can you help me again?

Thanks!

Pompeyo C

Simon,

The CREATE PROCEDURE statement in my first post had NO SQL because I originally tried a simple SP with NO SQL just to test if it can actually be called (this is the first time I tried using external SPs). When it finally did (after following your advice), I added a simple SQL INSERT statement and modified the CREATE PROCEDURE to MODIFIES SQL DATA. I am also using "target mfcob" now instead of "target ibmcob" on the db2 prep.

I am at home right now so I don't have access to the programs. I will post the snippets on Monday.

Thanks!

Pompeyo C

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