

webMethods EntireX

Using EntireX RPC for CL under IBM i

Version 10.9

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This document applies to webMethods EntireX Version 10.9 and all subsequent releases.

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1 About this Documentation

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Document Conventions

Convention	Description
Bold	Identifies elements on a screen.
Monospace font	Identifies service names and locations in the format <i>folder.subfolder.service</i> , APIs, Java classes, methods, properties.
<i>Italic</i>	Identifies: Variables for which you must supply values specific to your own situation or environment. New terms the first time they occur in the text. References to other documentation sources.
Monospace font	Identifies: Text you must type in. Messages displayed by the system. Program code.
{ }	Indicates a set of choices from which you must choose one. Type only the information inside the curly braces. Do not type the { } symbols.
	Separates two mutually exclusive choices in a syntax line. Type one of these choices. Do not type the symbol.
[]	Indicates one or more options. Type only the information inside the square brackets. Do not type the [] symbols.
...	Indicates that you can type multiple options of the same type. Type only the information. Do not type the ellipsis (...).

Online Information and Support

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- Open and update support incidents.
- Add product feature requests.

Data Protection

Software AG products provide functionality with respect to processing of personal data according to the EU General Data Protection Regulation (GDPR). Where applicable, appropriate steps are documented in the respective administration documentation.

2 Using EntireX RPC for CL under IBM i

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This chapter describes how to build a server application using the IBM i ILE language CL. The sample server will be named SENDMESS. Using the IBM i command SNGPGMMSG (send program message), it sends a message to a given IBM i user and returns a confirmation to the RPC client.



Note: The EntireX RPC Server for IBM i of EntireX version 7.1.1 running under IBM i (AS/400) is no longer supported. We strongly recommend using the new *RPC Server for AS/400* or the EntireX Adapter. See also *Connection Parameters for AS/400 Connections*.

Creating the Client/Server Interface

Using the Designer on your PC, create a Software AG IDL file similar to the following:

```
Library 'EXAMPLE' Is
Program 'SENDMESS' Is
  Define Data Parameter
    1 UserID          (A10)  In
    1 Message_Text   (A70)  In
    1 Confirmation   (A40)  Out
  End-Define
```

Creating a Sample Server in CL

The server is implemented as an ILE CL program of type *PGM.

For our IDL example SENDMESS, the implemented server looks similar to the example below:

```
          PGM          PARM(&USER &MESSTEXT &CONFIRM)
/*-----*/
DCL      VAR(&USER) TYPE(*CHAR) LEN(10)      /* the user ID */
DCL      VAR(&MESSTEXT) TYPE(*CHAR) LEN(70) /* the text */
DCL      VAR(&CONFIRM) TYPE(*CHAR) LEN(40)  /* returned text */
/*-----*/
CHGVAR   VAR(&CONFIRM) VALUE(' ')          /* clean it */
SNDPGMMSG MSG(&MESSTEXT) TOUSR(&USER) MSGTYPE(*COMP)

MONMSG   MSGID(CPF0000) EXEC(GOTO CMDLBL(BAD))
CHGVAR   VAR(&CONFIRM) +
          VALUE('Message sent to user' *BCAT &USER)
GOTO     CMDLBL(DONE)                      /* sending was ok */
/*-----*/
BAD:     CHGVAR   VAR(&CONFIRM) +
          VALUE('Message sending failed')
DONE:    ENDPGM
```

Because servers are running in a multithreaded environment, your application programs must be thread-safe. This implies that all commands and subprograms accessed in your servers must allow multithreads.

Compiling and Linking the Server

Compile the server source using the IBM i command `CRTBNDC` (create bound CL program).

The following example procedure demonstrates how to compile and bind an ILE CL program:

```

PGM          /* Compile and Bind a CL Server program          */
/*-----*/
DCL          VAR(&MODNAME) TYPE(*CHAR) LEN(10) VALUE(SENDMESS)
DCL          VAR(&LIBL) TYPE(*CHAR) LEN(10) VALUE(EXAMPLE)
DCL          VAR(&SRCF) TYPE(*CHAR) LEN(10) VALUE(QCLSRC)
DCL          VAR(&OPTL) TYPE(*CHAR) LEN(10) VALUE(*NONE)
DCL          VAR(&DBGV) TYPE(*CHAR) LEN(10) VALUE(*ALL)
/*-----*/
MONMSG      MSGID(CPF6801) EXEC(GOTO CMDLBL(DONE))
/* If PF12 is pressed */

CRTBNDC     ??PGM(&LIBL/&MODNAME) ??SRCFILE(&LIBL/&SRCF) +
            ??SRCMBR(&MODNAME) DFTACTGRP(*NO) +
            ACTGRP(*CALLER) OUTPUT(*PRINT) +
            OPTIMIZE(&OPTL) DBGVIEW(&DBGV)

MONMSG      MSGID(LNC9001) EXEC(GOTO CMDLBL(ERRXT))
GOTO        CMDLBL(DONE)
/*-----*/
ERRXT:     SNDPGMMSG  MSG('MSG: Program Linkage Failed')
DONE:      RETURN
ENDPGM

```



Important: When linking/binding servers, the binding parameter `ACTGRP(*CALLER)` must be specified. This guarantees that the server application runs in the same activation group as the calling RPC Server.

Name the resulting server program like the program name in the IDL file and put it in a library whose name corresponds to the library name in the IDL file.

Example:

If a client performs a request that is based on the IDL program `SENDMESS` in the IDL library `EXAMPLE`, the ILE server program `SENDMESS` in the IBM i library `EXAMPLE` is executed. If no corresponding program can be found, the access will fail.



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Verifying the Server

To verify the server program SENDMESS, use the EntireX IDL Tester when the RPC Server for AS/400 and EntireX Broker are used.

> To verify the server

- 1 Confirm that an EntireX Broker and an RPC Server for AS/400 are available in your network.
- 2 Make sure the IBM i host server is started on your IBM i machine.
- 3 Create a *Software AG IDL File* in the IDL Editor documentation using the *IDL Editor* as described under [Creating the Client/Server Interface](#).
- 4 Start the IDL Tester.



Note: When using the EntireX Adapter, use the **Service Development** perspective of the Software AG Designer for testing.