Invoking Natural Subprograms from 3GL Programs

Natural subprograms can be invoked from a programming object written in a 3rd generation programming language (3GL). The invoking program can be written in any programming language that supports a standard `CALL` interface.

For this purpose, Natural provides the interface `ncxr_callnat`. The 3GL program invokes this interface with a specification of the name of the desired subprogram.

Note:
Natural must have been activated beforehand; that is, the invoking 3GL program must in turn have been invoked by a Natural object with a `CALL` statement.

The subprogram is executed as if it had been invoked from another Natural object with a `CALLNAT` statement.

When the processing of the subprogram stops (either with the `END` statement or with an `ESCAPE ROUTINE` statement), control is returned to the 3GL program.

This chapter covers the following topics:

- Passing Parameters from the 3GL Program to the Subprogram

- Example of Invoking a Natural Subprogram from a 3GL Program

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Passing Parameters from the 3GL Program to the Subprogram

Parameters can be passed from the invoking 3GL program to the Natural subprogram. For passing parameters, the same rules apply as for passing parameters with a `CALL` statement.

The 3GL program invokes the Natural interface `ncxr_callnat` with four parameters:

- The 1st parameter is the name of the Natural subprogram to be invoked.

- The 2nd parameter contains the number of parameters to be passed to the subprogram.

- The 3rd parameter contains the address of the table that contains the addresses of the parameters to be passed to the subprogram.

- The 4th parameter contains the address of the table that contains the format/length specifications of the parameters to be passed to the subprogram.

The sequence, format and length of the parameters in the invoking program must match exactly the sequence, format and length of the fields in the `DEFINE DATA PARAMETER` statement of the subprogram. The names of the fields in the invoking program and the invoked subprogram can be different.

Example of Invoking a Natural Subprogram from a 3GL Program

For an example of how to invoke a Natural subprogram from a 3GL program, refer to the following samples in `NATDIR:[v`*nnnn*`.samples]` (where *nnnn* is the current version number).

- `MY3GL.NSP` (for the main program),

- `MY3GLSUB.NSN` (for the subprogram),

- `MYC3GL.C` (for the `C` function).