5 *Interfacing with Other Languages*

Interfacing with Other Languages

Code compiled using the C compiler is easily linked with programs written in either FORTRAN or in assembly code. Calling can be done in either direction.

Users need to understand the differences in language semantics of calls in different languages. For example, FORTRAN passes all parameters by reference while C passes everything by value except for arrays and functions.

C naming conventions

All externally available symbols (those available to link with) are the name specified by the user, prefixed with a single underscore character. This applies to global variables and all extern functions (those not declared static).

FORTRAN

The following sections describe how to:

- call a FORTRAN function from a C program
- call a C function from a FORTRAN program

Calling a FORTRAN function from C

A call from C to a FORTRAN declared routine must call the FORTRAN routine by specifying the FORTRAN routine's name in lower case and suffixing with an underscore character. When declaring the routine in FORTRAN, the name can be specified in any case and without the underscore character. For example, a C program can call the FORTRAN routine 'EXAMPLE' by calling 'example_.'

Calling a C function from FORTRAN

Any C function to be called from FORTRAN must be named in lower case and suffixed with an underscore character. When calling from FORTRAN, the name of the C routine can be specified in any case and without the underscore character. For example, a C routine declared as 'foo_' can be called from FORTRAN with 'CALL FOO.'