

1 Installation of gnu80

Insofar as the source code of gnu80 is designed to be portable FORTRAN 77, there are no installation instructions except “Generate the Fortran source from the FWEB files, Compile the FORTRAN and link it to form an executable module” .

However, if you need a simpler route, go to the directory gnu80web and change the first line to read:

```
PREFIX="full path to where you are"
```

and then say:

```
./build_gnu80 > & build_gnu80.log &
```

After some time you should find the file a.out has been created in that directory together with a (large) build_gnu80.log file with all the gory details of what has happened during the build.

If you do not have (or do not like) FWEB then you will have to go into the src and NBO directories and edit off all the FWEB details from the Fortran source which will be *very* tedious.

However, there are one or two points where the FORTRAN 77 standard is not precise enough to ensure complete portability and it is wise to be aware of these:

- The *units* of the RECL (record length) parameter in a direct access OPEN statement

```
OPEN(UNIT=file,ACCESS='DIRECT',RECL=record_length, ...)
```

is not defined by the standard; typically it may be bytes or quadruples of bytes.

In gnu80 as supplied a unit of *bytes* is assumed and RECL is set to 16380 (=4*4095).

To use the existing file I/O routines (via NTRAN) the record length must be enough to store 4095 default-length INTEGERS. If a different buffer is required, then SUBROUTINE NTRAN must have the occurrences of 4095 changed and the RECL parameter changed accordingly.

- The mode of storage of (particularly) characters in variables of type INTEGER is not defined by the standard (see IORD ??).
- The coding used to store characters is not defined although the ASCII code is almost universally implemented. gnu80 assumes that the ASCII code is used but it is hoped that the use of EBCDIC will not cause difficulties!

In addition to these points *within* the standard, there is an important and systematic departure from the standard in this release of **gnu80**. Characters are stored in variables of non-**CHARACTER** type either by reading in A-format or by **DATA** initialisation statements. This is endemic in the code and cannot be eradicated from this release!

<p>If the storage of CHARACTER constants in variables of non-CHARACTER type is a compilation <i>error</i> on the target machine/compiler, not simply a <i>warning</i>, then this release of gnu80 cannot be installed on that system.</p>
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