

Subject: Adding an *access-spec* to USE
 From: Van Snyder

1 Introduction

There are at least three ways that processors can cope with the requirements of use association:

- Read source files. The authors of the GNU Ada compiler have found this to be the most efficient approach. In Ada, the package specification and package body are separate. In Fortran, modules are monolithic. Therefore, the experience of the authors of the GNU Ada compiler is perhaps not applicable to Fortran.
- Write “module information files” that have a representation of all of the public entities declared within the module, and a representation of all USE statements within the module. This may result in small module information files but large processing time – which will depend to some extent on the cost of opening and closing files.
- Write “module information files” that have a representation of all of the public entities accessible from the module by use association. This may result in rapid processing, but large module information files.

A large number of public entities causes large module information files in the third case above, and large processing time in all cases.

Most naive Fortran users are unaware that public entities accessed by use association from one module to another remain public entities in the using module, if the default accessibility of the using module is public – which is, if you will pardon the redundancy, the default default accessibility. It would be more obvious that these entities are (probably) public if it were possible, within the USE statement, to specify the accessibility or default accessibility of entities accessed by use association (default if “only” is not specified).

Programs could also have slightly fewer statements, which would slightly reduce their lifetime costs, if it were possible to specify the default accessibility of entities accessed by use association within the USE statement.

2 Edits

Edits refer to 01-007. Page and line numbers are displayed in the margin. Absent other instructions, a page and line number or line number range implies all of the indicated text is to be replaced by immediately following text, while a page and line number followed by + (-) indicates that immediately following text is to be inserted after (before) the indicated line. Remarks are noted in the margin, or appear between [and] in the text.

[Editor: Add “USE” statements to the list, to prohibit specifying <i>access-spec</i> more than once.]	78:15
[Editor: “ <i>module-nature</i> ” ⇒ “ <i>use-attr</i> ” twice.]	235:37-38
R1107 ¹ / ₂ <i>use-attr</i>	
is <i>module-nature</i> [, <i>access-spec</i>]	235:39+
or <i>access-spec</i> [, <i>module-nature</i>]	

[Editor: In the same paragraph, add “An *access-spec*, if present, specifies the default accessibility of the entities accessed.” Notice the presence of “default”.] 236:20

[Editor: In the same paragraph, add “An *access-spec*, if present, specifies the accessibility of the entities accessed.” Notice the absence of “default”.] 236:22