

Subject: Use ALLOCATABLE and POINTER attributes in generic resolution
From: Van Snyder
Reference: 03-258r1, section 2.3.2, 04-170

1 **1 Number**

2 TBD

3 **2 Title**

4 Use ALLOCATABLE and POINTER attributes in generic resolution.

5 **3 Submitted By**

6 J3

7 **4 Status**

8 For consideration.

9 **5 Basic Functionality**

10 Use ALLOCATABLE and POINTER attributes in generic resolution.

11 **6 Rationale**

12 I have a generic interface `Allocate_Test` that allocates an object, tests the status, and prints an error
13 message if an error occurs. I cannot have a specific interface for a to-be-allocated argument that has
14 the `POINTER` attribute, and another for a to-be-allocated argument with the same type, kind type
15 parameters and rank that has the `ALLOCATABLE` attribute. So I need different generic names for
16 allocatable objects and pointer objects. If I change an object from pointer to allocatable or vice-versa, I
17 have to track down all of the `Allocate_Test` invocations for that variable and change them to the other
18 one. Avoiding this labor was one of the justifications for the generic facility.

19 **7 Estimated Impact**

20 Minor. Estimated at J3 meeting 169 to be at 5 on the JKR scale. If the suggested edits below are
21 accurate and sufficient, it is more likely at 3 on the JKR scale.

22 **8 Detailed Specification**

23 Allow the `POINTER` and `ALLOCATABLE` attributes to be used as the last resort for generic resolution:
24 If the only difference between two specific interfaces is that in one there is a dummy argument that has
25 neither the `POINTER` nor `ALLOCATABLE` attribute, and the corresponding argument in the other
26 one has one of those attributes, the interface is ambiguous. If one has the `POINTER` attribute and the
27 corresponding one has the `ALLOCATABLE` attribute the interface is not ambiguous, at least so far as
28 that pair of specific procedures is concerned.

29 If a dummy argument has the `POINTER` or `ALLOCATABLE` attribute, the corresponding actual argu-
30 ment is required to have the same attribute. Therefore this change would not invalidate any existing
31 program.

1 **8.1 Suggested edit**

2 The following suggested edit is intended to illustrate the triviality of the project. This edit is believed
3 to be all, or nearly all, that is needed.

4 [Editor: After “other” insert “, or if neither is a subroutine and one has the ALLOCATABLE attribute 407:29
5 and the other has the POINTER attribute.”]

6 **8.2 Alternative suggested edit**

7 [Editor: After “other” insert “, or if both are dummy data objects and one has the ALLOCATABLE 407:29
8 attribute and the other has the POINTER attribute.”]

9 **9 History**