Subject: Allow any combination of assumed and explicit shape
From: Van Snyder
Reference: 03-258r1, section 2.9.2.2

Number

TBD

Title

Allow any combination of assumed and explicit shape.

Submitted By

J3

Status

For consideration.

Basic Functionality

Allow any combination of assumed and explicit shape.

Rationale

In many applications, one knows the values of some array bounds, but not all. In one application, I have a 2×2 matrix at every point along a path of indeterminate length. If I could declare this using `incoptdepth(2,2,:)`, I would have some confidence that the processor would optimize the MATMUL operations along the path, without needing to write `incoptdepth(1:2,1:2,j)`. At another point in the same application, I have an array that corresponds to the σ_-, π and σ_+ components of a Zeeman-split spectral line. The first dimension here is naturally `-1:1`.

Estimated Impact

Minor.

Detailed Specification

Allow any dimension of a pointer or allocatable array to be declared with explicit, assumed or deferred shape, independently of the others. Allow the last dimension of a pointer array to be specified by an asterisk. If the bounds for any dimension are given explicitly in the declaration, the same values shall be specified for those bounds in an ALLOCATE statement. If a pointer with such bounds is the left-hand side in a pointer assignment statement, and any bounds are specified, any bounds explicitly specified in its declaration shall have the same values in the pointer assignment statement.

History