

## Re: ALLOCATABLE arrays

**Source:** <http://coding.derkeiler.com/Archive/Fortran/comp.lang.fortran/2004-01/0172.html>

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**From:** Lawson Wakefield ([lawson\\_at\\_see.my.sig](mailto:lawson_at_see.my.sig))

**Date:** 01/06/04

Date: Tue, 6 Jan 2004 16:41:18 +0000

In article <b7mlvvkdaq74vvgvji1bm5jlbr6scuo8fq@4ax.com>, Herman D. Knoble <SkipKnobleLESS@SPAMpsu.edu> writes

>Lawson: Apologies if I misunderstand you post here. The bound(s) of an  
>automatic array  
>need not be defined in a module. E.g., see first case of working examples in  
>file:  
>  
><http://ftp.cac.psu.edu/pub/ger/fortran/hdk/AutomaticArray.f90>  
>  
>Skip Knoble, Penn State

No I didn't say that they \*need\* to be defined in a module. What I actually said was that they must be a "specification expression", which in practice can be various things, one of which happens to be a variable in a module (which was the case referred to by Gus). Mike's post incorrectly implied that the bounds had to depend on an argument to the procedure.

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>  
>On Tue, 6 Jan 2004 14:48:18 +0000, Lawson Wakefield <[lawson@see.my.sig](mailto:lawson@see.my.sig)> wrote:  
>  
>--|In article <btbnj7\$4qu\$06\$1@news.t-online.com>, Michael Metcalf  
>--|<[metcalfn@acm.org](mailto:metcalfn@acm.org)> writes  
>--|>  
>--|>"Gus Gassmann" <[hgassman@mgmt.dal.ca](mailto:hgassman@mgmt.dal.ca)> wrote in message  
>--|>news:3FF953CD.BB2A1853@mgmt.dal.ca...  
>--|>>  
>--|>> Do I read this right?  
>--|>>  
>--|>> Suppose I declare  
>--|>>  
>--|>> subroutine test

>-|>> *integer :: i*  
>-|>> *dimension i(k)*  
>-|>>  
>-|>> *where k is set in a module somewhere. Is it then the case that*  
>-|>> *a) i gets allocated automatically on entry to test and deallocated*  
>-|>> *on exit*  
>-|>> *b) this operation takes (essentially) zero time?*  
>-|>>  
>-|>> *Is that really all there is to it? I'm afraid to look a gift horse*  
>-|>> *in the mouth, but this sounds too good to be true!*  
>-|>>  
>-|>> *It is. The shape of an automatic array must depend on an argument to the*  
>-|>> *procedure that it is local to. It is created on a stack at each invocation.*  
>-|>> *The main use is for temporary storage ("Fortran 90/95 Explained", Section*  
>-|>> *6.4).*  
>-|  
>-|*Are you absolutely sure about that Mike? Specifically, the requirement*  
>-|*that the shape of an automatic array must rely on an argument to the*  
>-|*procedure would not appear to apply. My understanding is that the*  
>-|*bound(s) of an automatic array must be a specification expression. As*  
>-|*such this also allows for variables which are defined in a module, as*  
>-|*Gus suggests. Certainly, the latter usage works with a remarkably wide*  
>-|*range of Fortran 9x compilers if is not in fact allowed.*  
>-|  
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