

Use static analysis tools, including Fortran compilers, to detect problematic code, such as

- Language features that are obsolescent, non-conforming, or deleted
- Uninitialized variables
- Integer overflows

Enable the compiler's detection of such code. 6.22, 6.25, 6.53, 6.56, 6.57, 6.54, 6.58

Enable bounds checking and pointer checking throughout development of a code and only disable such checking during production runs when performance requirements cannot be met otherwise. 6.8, 6.14

Use all run-time checks that are available during development to detect:

- Uninitialized variables
- Real value exceptions
- Integer overflows
- Null pointer checks
- Dangling pointer checks
- Recursion depth ???

6.2, 6.52

Declare all variables and use `implicit none` to enforce this. 6.17, 6.21, 6.54, 7.1

Use an allocatable object in an assignment where differently-sized objects might occur so the left-hand side object is reallocated as needed. 6.8, 6.9

Use allocatable objects in preference to pointer objects unless pointer assignment is required. 6.13, 6.14, 6.33, 6.38, 6.39

Use explicit interfaces. 6.11, 6.32, 6.34, 6.46, 6.49, 6.53, 6.56, 6.57

Do not use keywords as names and do not reuse names in nested scopes. 6.17, 6.20

Cover cases that are expected never to occur with a case default clause to ensure that unexpected cases are detected and processed, perhaps emitting an error message. 6.27

Perform IO on any given file in one programming language only; consider restricting all IO to one language system only. 6.47

Specify argument intents to allow further checking of argument usage. 6.32, 6.65

Avoid the use of the intrinsic function `transfer`. 6.53

Include an `iostat` or `stat` variable when possible and check its value to ensure no errors occurred. 6.6, 6.8, 6.14, 6.59.

For parallel programming

- Use coarrays only when communication among images is necessary.
- Use collective subroutines whenever possible.

6.61, 6.63

Use procedures from a trusted library to perform calculations where floating-point accuracy is needed. Test the diagnostic status values returned. 6.4