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Fortran

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Results of Straw Poll on Changes to the Fortran Draft Standard

Introduction

A “straw poll” of WG5 members was run from October 23, 2017 through November 11, 2017. The poll asked:

- Whether three technical changes, approved by J3 at its October 2017 meeting, should be included in the current draft.
- Whether a DIS (Draft International Standard) should be prepared and sent for ballot.
- Whether the informal name of the draft standard should change from Fortran 2015 to Fortran 2018.

25 responses were received. The questions on technical changes and creating a DIS had no objections, so they are accepted. The question on the language name had 17 in favor, 5 opposed and 3 abstentions. As a result, the informal name will change to “Fortran 2018”.

This document lists the poll questions and includes any comments provided.

Question 1

“Do you approve making the technical change to add a requirement that the variable specified for STAT= in MOVE_ALLOC and the ATOMIC_xxx intrinsics have a minimum decimal range of 4? See J3 paper 17-219 for details.”

Yes/No/Abstain – 25/0/0

No comments received

Question 2

“Do you approve disallowing a coarray or coindexed variable on the left side of an intrinsic assignment statement if it is an unallocated allocatable variable? This is an incompatibility with Fortran 2008 which did not disallow this. See J3 paper 17-228 for details.”

Yes/No/Abstain – 24/0/1

Comments

- I am convinced that this was an inadvertent feature.

Question 3

“Do you approve making the technical change to disallow coarrays of TEAM_TYPE? See J3 papers 17-202r1 and 17-250r2 for details.”

Yes/No/Abstain – 23/0/2

Comments

- I understand the reasons for a vendor to prefer the new design, but it is very late in the process for such a change.

Question 4

“Do you approve, after making changes passed at J3 meeting 214, creating a Draft International Standard (DIS) and sending it for ballot? This would meet the current development schedule.”

Yes/No/Abstain – 25/0/0

No comments received

Question 5

“Do you approve changing the informal name of the in-development Fortran standard from "Fortran 2015" to "Fortran 2018"? See J3 paper 17-193r1 for details.”

Yes/No/Abstain – 17/5/3

Comments in favor

- Changing from 2015 to 2018 may cause some initial confusion but this disadvantage is outweighed, albeit by a small amount, by making Fortran seem a little more up to date. I had an undergraduate student in my office on Friday who heard me use the word Fortran while I was talking to one of my PhD students. The undergraduate student said "that's an ancient language". He had recently worked on a project at another university (Berkeley) that required him to translate some old Fortran code to matlab.
- Given the common perception that Fortran is a "legacy language" in some potentially influential quarters (specifically in the UK the Research Software Engineering movement seems convinced that Fortran is either dead or should be) I think that the risk posed by confusion over the name change is smaller than the risk posed by the perception that Fortran is moving too slowly to be useful.
- I echo the sentiments expressed by others who already voted "yes" on this. The name change will introduce short-term confusion, but hopefully the long-term effect will be one of increased relevance in the minds of application developers.
- Yes! Fortran is in a fight for mindshare and users against C++ and other alternatives for high performance computing. The typical young HPC developer's view of Fortran as a dying language of the past is reinforced by the perception that it takes 5+ years for implementers to add support for a given version of the standard with highly-desired new features. This perception is partially artificially created, and certainly exacerbated, when a version of the standard is named after a year that is 3 years prior to the finalization of that version. Our work is measured against languages that name their standards with the year they are published. I believe we suffer unnecessarily by comparison. While this is nothing more than a programming language marketing and positioning issue, we at NVIDIA and PGI think it's very important and the committee would be unwise to ignore it. Seldom do we have such easy decisions that have the potential make such a big difference in the perception and ongoing success of the Fortran language.

Changing the name of the standard to "2018" will cause some temporary confusion, but leaving the name as "2015" runs the risk that more people will turn away from Fortran permanently.

- The content of the language revision was specified in broad terms in 2015 but detailed development has continued and even now is not finalized. Hence 2017 or 2018 would be a more appropriate name.

What finally became Fortran 90 had three previous names (82, 8X, 88). The committee felt able to change the name to match reality.

Outside its immediate community Fortran is widely seen as a legacy language, somewhat on a par with COBOL. For example, in classifying its specialist groups the British Computer Society recently allocated Fortran to 'History of computing' rather than to 'Software development'. I am repeatedly asked such things as 'Is Fortran still going?' and 'Why are you wasting your time on such an old language?'.

Hence to publish Fortran 2015 in 2018 (a three-year backward gap being longer than for any previous revision) would, in the wider world, only tend to reinforce the perception of Fortran as being behind the times.

- We've kept on making significant technical changes, not all of which are explainable as "integration issues". It's time to use the same naming convention as everyone else.
- In Japan, where translation is expected for Fortran standards, the gap between the informal name and the publishing year will be enlarged more than the English case. We welcome this name change, for the reasons others have already written.

Comments opposed

- Some vendors have an unofficial goal of producing a compiler within 3 years of the "year" of the standard, with a relatively good record of meeting that goal. (Others delay considerably longer.) Making the change to 2018 would provide excuses to delay implementations until 2021 or later. This is opposite to what would be beneficial to the user community.
- We chose the name in 2015, see N2073, and have been using it ever since. We were well aware of the 3-year gap before publication, see N2070.
- Fortran 2015 is today well known around the world to mean the next standard, so a name change now creates a needless potential for confusion, and might be taken as signaling difficulties.
- While I understand the feeling that "Fortran 2015" may appear ridiculous for a release in 2018, having a 10-year hiatus for subsequent releases is not really much better. Since the working name by now is pretty established outside committee circles, I think it is on balance better to keep it.
- I think that it should stay as it is just to avoid confusion.