Subject: BIT data type
From: Van Snyder
Reference: 03-258r1, section 2.2.6

Number

TBD

Title

BIT data type.

Submitted By

J3

Status

For consideration.

Basic Functionality

Provide simpler functionality to access individual bits.

Rationale

Facilities to use individual bits are frequently requested, for a number of reasons that are well known.

Estimated Impact

Small to moderate, depending on how it's done.

Detailed Specification

There are at least three ways to provide facilities to use individual bits. One is an intrinsic BIT datatype. This would be the most work.

Another is to provide more control over the LOGICAL type. If the LOGICAL type were extended by providing (1) a length parameter and (2) a SELECTED_LOGICAL_KIND intrinsic function, much of the functionality desired for a BIT data type could be realized. The SELECTED_LOGICAL_KIND intrinsic function should take an argument that gives the number of bits in a logical variable. There should be no assumption that independent logical variables, or different elements of a logical array, are packed, but consecutive elements of a logical string should be packed.

A third is to provide for subranges of integers, which is a separate proposal. That proposal would be a bit of work (not nearly as much as a new intrinsic type), but would have numerous other applications. If it succeeds, the other two proposals presented here are less pressingly needed.

History