

## IEEE Standards Interpretations for IEEE Std 1003.2™-1992 IEEE Standard for Information Technology--Portable Operating System Interfaces (POSIX®)-- Part 2: Shell and Utilities

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### Interpretation Request #105

**Topic:** expr standard output representing a null string **Relevant Clauses:** 4.22.6.1

In IEEE Std 1003.2-1992 subclause 4.22.6.1 (Standard Output of the expr utility), P276, L4127-4129, the description of the standard output representing expressions evaluating to zero and to null strings is: The character '0' shall be written to indicate a zero value and nothing shall be written to indicate a null string. This could be interpreted literally to mean that the output in these two cases must not include a newline character. (At least one developer of a POSIX.2 test suite has used this interpretation for the null string, but not for '0'.) In both BSD and System V historic practice, an expression evaluating to zero produced "0\n" on standard output and an expression evaluating to a null string produced an empty line on standard output. The rationale in clause E.4.22, P904, L6209-6213 acknowledges that expr could be replaced by other shell constructs in the POSIX.2 shell, but says the utility was kept because of the many historical shell scripts that use it. The rationale also mentions that other changes in early drafts of the standard were backed out because they weren't historic practice (see L6229- 6230). It seems strange that this change to historical practice was not documented if it was intentional. To match historic BSD and System V implementations, the second sentence of the Standard Output section on P276, L4128-2129 should have been something like: An empty line shall be written to indicate a null string. Note that the zero case is already handled in the first sentence in that section. Was this change to historic practice intentional?

### Interpretation Response

The standard is clear that a nl is not appended to the results of the evaluation in any case. This is not historical behavior, however, conforming implementations must conform to this. However, concerns have been raised about this which are being referred to the sponsor.

**Rationale for Interpretation**

None.