Introduction: Why this workshop, and what might it accomplish?

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Way back in the 1980's, many people had been exposed to Un*x on large computers at school or work. They compared Un*x with what was available to them at home, and knew what they wanted: something that looked just like Un*x but was free, and would run on a small personal computer that they could afford. Several different groups got to work trying to make that dream a reality.

The GNU project replicated an enormous number of Un*x utilities, but never was able to produce a kernel. Linus Torvalds and friends produced a functional kernel, but it was of interest only to a few computer geeks. Scores of others produced all sorts of miscellaneous pieces. None of these comprised a complete Un*x-like system in themselves, but the uncoordinated project as a whole did succeed. Eventually there were enough miscellaneous pieces that a relatively complete Un*x system could be cobbled together. What we now know of as "Linux" was born!

Today in exploration Geophysics, sharing algorithms is difficult. The most common method of widely disseminating a new processing technology is to publish an EAGE or SEG conference abstract. Four pages for the author to describe their method, and then you (and, independently, your counterparts at every other major organization!) get to try to take that and produce a working code. This method of sharing algorithms is enormously frustrating and inefficient, and holds back the rate of progress of the entire field. Too many talented geophysicists are wasting their time doing bad computer science and rebuilding infrastructure already available elsewhere, instead of good research geophysics. The benefits of a widely available open-source package that could be used both for fast-turnaround innovative research and for industrial-strength processing, by academic institutions, contractor companies, and oil companies alike, would be enormous. What is holding us back?

Lots of things, unfortunately, most of which a one-day conference workshop cannot help. However, this workshop can perhaps accomplish two things. The "Linux community" had the advantage of a clear vision of what they were trying to make: Un*x. We have a babel of possibilities instead. This workshop will allow those with good ideas to share them. Seeing these presented together should make it clearer what it is that we could be striving for. This workshop will also allow those with interesting software pieces to show them off. Once we better know what it is that we are trying to create, we may discover that most of the pieces we'll need to make our vision a reality in fact already exist, and just need to be cobbled together. It's happened before!