

The Free Standards Group – Future ISO Standards for Linux

Introduction

In May 2003, JTC 1 & SC22 held a “study group” to consider the possibilities for ISO standardization for the Linux Operating System and its environment.

This study group has led to a number of areas where SC22 is now more involved in the Open Source standards arena, in particular accepting a liaison between themselves and the Free Standards Group, and JTC 1 has accepted the FSG as a PAS submitter. It is expected that the FSG will submit the Linux Standards Base specification for ISO standardization through the PAS process within the next six months.

The study group also produced a set of definitions, outlined in resolution SG-01:

Resolution SG-01 - Definitions

Whereas the Linux Study Group recognized many possible interpretations of the scope of Linux related terms, Resolved that, for the purposes of this meeting and the materials arising from it, the following definitions will be used:

a) "LSB ABI layer": the binary interface of the kernel, C library, I18N functionality and core utilities corresponding to the APIs presented in ISO/IEC 9945: 2003 POSIX;

b) "LSB": the LSB ABI layer plus those other sections in the Linux Standards Base (LSB) document, namely Packaging, File Hierarchy, User and Groups and System Initialization;

c) "Linux Distribution": everything on any vendor's Linux release.

The steps taken so far have been involved with the first two of these definitions, regarding the LSB project. During the 2003 Oslo plenary meeting of SC22 a Linux breakout session decided that it was worthwhile exploring the third definition, and understanding if there was anything else beyond the LSB that was worthy of standardization. Clearly, with a scope as wide as “everything on any vendor's Linux release” it is impractical to consider standardizing the entirety of this definition ... i.e. To produce an ISO Standard Linux Distribution. However, if we consider instead the scope of this meeting to be “anything on any vendor's Linux Release”, the scope is more reasonable, and this paper uses this alternate definition.

Technical Requirements

The resolution forming this Rapporteur Group asked it to *Identify technical requirements of JTC 1 National Bodies for “Linux Distribution”, as defined in Resolution SG-01-Definitions of the Linux Study Group.* While the FSG cannot answer this on behalf of other National Bodies, it is our belief that there exists a strong demand for formal standards around Linux. Various global research organizations, such as IDC and Gartner

group, have documented the continuing widespread adoption of Linux, both in the server room and on the desktop. IDC currently estimate that the value of the Linux server market alone will be approximately 9.1B USD in 2007, and the biggest single sector of that market by that date. In IDC' s words, "Systems vendors are likely to own this market in the near term (IBM, HP, Sun, etc.), but as standards develop, third party providers will have more opportunity to compete".

The current plan to submit LSB 2.0 through the PAS process for transposition to IS is an essential start to developing the standards required. As the market matures, other areas will undoubtedly be identified, but it is also important to let the market mature properly. Mistakes made at this stage will have a lasting negative impact on the widespread adoption we all desire. Other standards efforts have hit similar problems; the POSIX market would undoubtedly be much larger had the "GUI wars" of the early 1990' s not occurred.

There is an argument that end users are insufficiently intelligent to be able to choose between different competing interfaces, and having a standard to dictate a direction will improve the overall marketability and therefore success of the system as a whole. This argument is founded on two basic premises:

1. Users are stupid
2. Vendors don' t care which interface, they just want to know which to make the default

It is my opinion that both of these premises are flawed.

The FSG is actively engaged in identifying emerging areas for standardization, and national body input is strongly encouraged. However, many of these specifications will emerge as "recommended practice" style specifications, many of which will be experimental in nature at their first release.

One of the greatest strengths of Linux is also seen as one of its greatest weaknesses: it is so totally configurable that no two users experiences need be the same. International Standards should follow existing practice, and not attempt to lead it. Competition is necessary and desirable. We should be standardizing the mechanisms and interfaces that are widespread, and not every aspect of every distribution.

Identified Publicly Available Technologies

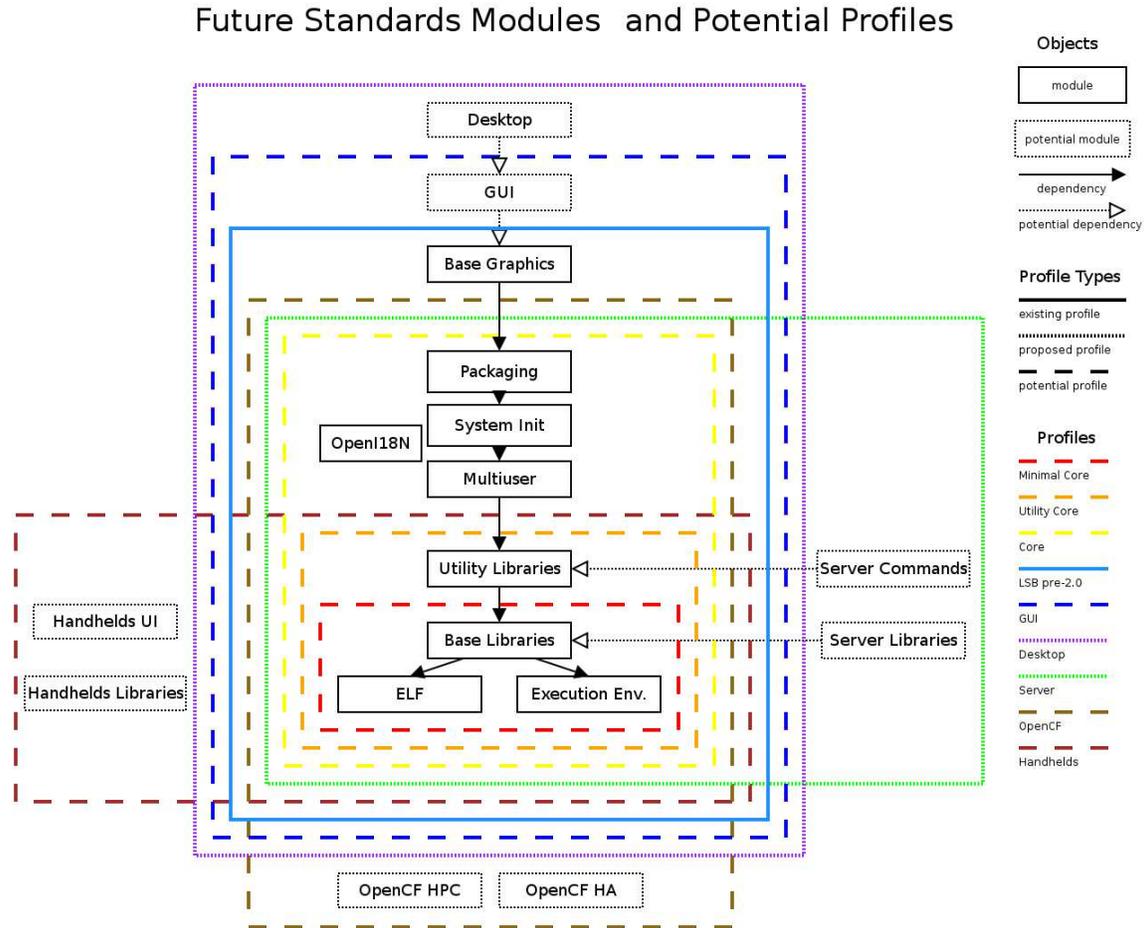
The "lsb-futures" group (see <http://www.linuxbase.org/futures>) is busy identifying the technologies that are prerequisites for other applications, and quantifying that by determining how many other applications depend on a given package. This effort is leading to a road map for future development of the LSB, and some of these recommendations will be in release 2.0, the version to be used for ISO transposition. Other technologies will be added to the LSB as they become both mature (stable) enough and consensus is possible.

The current plan is to submit LSB version 2.0 for standardization through the PAS process as soon as it is approved. The LSB Futures group is looking beyond this version of the specification, and as additional technologies are rolled into future releases of the

LSB, the FSG will seek to revise or amend the ISO approved standard, through the PAS process again.

Other FSG workgroups are building more experimental specifications. As these mature, they too may be forwarded through the PAS process.

The following diagram is a draft (still under development) proposal for the future shape of the LSB.



Scope For Future Linux Standards

It is the intent of the FSG to submit its specifications through the PAS process as and when they become mature and stable enough for consideration as ISO standards. Should SC22 identify areas that are not currently within the FSG program of work, the FSG will of course be delighted to participate in any working group formed to develop standards. Since it is possible, or even likely, that such a working group will be working on newly emerging technologies, if necessary the FSG can lead a workgroup to identify the recommended practices and trial-use specifications before forwarding them for international standardization.

Issues and Risks

There are several risks in forwarding any current specification or technology for ISO standardization at this point:

1. The technology is insufficiently mature.
2. There are multiple competing specifications that meet the same goal
3. There is no buy-in from the upstream maintainer of the software in question to follow the standards track

FSG Activities of Interest to SC22

The FSG has a number of workgroups currently sponsored to produce specifications:

1. LSB. The primary development and maintenance authority for the Linux Standards Base documents (the generic LSB and all of the architecture specific LSBs), and the home of the LSB-futures group.
2. OpenI18n. This group, formerly known as LI18NUX, is responsible for producing globalization and localization specifications; these can either be fed into the LSB core specification, or produced as stand-alone documents.
3. LANANA, the Linux Assigned Names And Numbers Authority, a register of assigned names; this group avoids name space collisions when delivering packaged applications etc.
4. Open Cluster Framework. This group is working to produce recommended practices for clustered Linux solutions
5. Open Printing. This group is producing new APIs around the whole area of print management, utilizing best existing industry standards and protocols where appropriate.
6. Accessibility. This group is dealing with numerous issues around the “look and feel”, GUI selection, and style.

SC22 Work Areas of Interest to FSG

In its application for Category A liaison with SC22, the FSG highlighted four Working Groups with which there is currently an overlap in scope:

1. WG14, C Programming Language.
2. WG15, POSIX.
3. WG20, Internationalization.
4. WG21, C++ Programming Language.

The FSG expects to work closely with these working groups over the next year to identify specific areas of overlap to ensure that there is no divergence between projects within the scope of SC22 and within the scope of the FSG.

Future Directions

Rule #1: ‘If it ain’ t broke, don’ t fix it’. Standards for standards-sake have little or no practical value. The FSG has developed a good working relationship within the Open Source Community such that upstream maintainers generally are prepared to work with them to ensure that technologies are able to conform to standards. However, many of these maintainers are very wary of having direction forced upon them, and a standard developed outside that community and without their involvement will likely be viewed negatively. Few if any products would conform to such a standard, and the entire process could be derailed.

Open Source development is as much a political statement as anything else. The FSG is viewed as bridging the needs of the Free and Open Source Development Community and IT Industry.