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Section 6: Profiles

Responsibility: Fritz Schulz

This section targets those who want to know more about what profiles are and those who are in the process of developing their own profiles. The latter group consists of those developing formal ''Standardized Profiles'' and those developing less formal profiles for their industry group (e.g., a banking trade association) or their own company or enterprise for procurement or strategic planning purposes.

Those not involved in the development of profiles should read 6.2. Parts of 6.3 also may be useful, especially the earlier subclauses that give definitions of terms and explain concepts more precisely.

Developers of profiles that are not formal POSIX Standardized Profiles (POSIX SPs) should read all of Section 6.

Developers of profiles that are formal POSIX SPs should read all of Section 6 and Annex A.

6.1 Scope

The information presented here about profiles is limited in scope to assist those needing to understand profile concepts as they apply to the POSIX Open System Environment. Covered are profiles constructed from standards (and profiles) listed within this guide (that, by design, are consistent with POSIX.1).

The goal is to create a common approach and documentation scope and style for POSIX-oriented profiles. Annex A goes further by giving specific guidance to developers of formal POSIX SPs.

6.2 Profile Concepts

Responsibility: Bob Gambrel

Introduction

This guide is designed to assist in the selection of standards in the procurement process or as a target application environment. Profiles also assist in the selection of standards. A profile is a suite of base standards with specified options. Profiles can be created by software developers to describe the environment they target or by buyers to identify their purchasing objectives.

Basic Terminology

See 2.2.2 for relevant terms that will be used in this section: base standard, application environment profile, profile, standardized profile, and POSIX standardized profile.

There are two general classes of standards documents:

— Base standards

— Profiles (including AEPs, standardized profiles, and POSIX SPs)

As used in this guide, base standards specify functionality, syntax, protocols, data formats, etc., in detail, while profiles do not. Instead, profiles identify which base standards are applicable. Since base standards often consist of a base or mandatory part and a number of selectable optional parts and values, profiles may also (or may not) choose, for each base standard, specific options or values. A profile may also identify other profiles, allowing the construction of ''larger'' profiles based on both base standards and other ''smaller'' profiles.

NOTE: Profiles go by many names throughout the world including ''functional standards,'' ''implementation agreements,'' and ''specifications.'' In the context of internationalization, the term ''national profile'' is frequently used and will be found, for example, in POSIX.1 {2} and POSIX.2 {*ref*}. Its meaning is consistent with the definitions in 2.2.2, but in many cases such profiles reflect national cultural conventions. For example, Denmark and Japan both have specified a national character profile.

6.2.1 Relationships Between This Guide and Profiles

Key to the understanding of profiles is a discussion of the relationships that exist among profiles, this guide, and the base standards.

There exist many thousands of base standards, each addressing a particular, usually narrowly scoped, area of application portability or interoperability. Many of the base standards, developed over the years, are simultaneously narrow in scope (for example, a C binding of SQL), but broadly applicable (for example, applicable to Operating Systems that have 'POSIX'' interfaces and those that do not.)

The base standards listed in 1.2 form the basis of the POSIX Open System Environment. The list is comprehensive, in that its coverage is broad enough to cover most modern day application development, and the base standards selected have been determined to be consistent with POSIX.1 {2}.

While this guide does not list all base standards, it is still a large list, and in fact the list contains base standards that might not be consistent with each other (choose any two standards from the POSIX OSE and they might not be consistent with each other.) The process of profile writing addresses this.

The profile writer reduces even further the list of base standards to just the (relatively) few that are needed to provide portability and interoperability in a given functional area. In the process, the profile writer grapples with the coherence of the selected base standards by choosing only those that will work together to get the particular job done. Profile writers should also deal with *harmonization,* which means making the profiles consistent with each other where they overlap. This can often be done among profiles even where the functional areas served differ greatly. Procurements specifying two profiles that have been harmonized by their authors have the benefit of knowing that the two will not conflict with each other.

By specifying compliance to a particular profile in a procurement, a consumer easily references a set of multiple base standards that have been determined to: serve a particular purpose; work together; and be consistent with POSIX.1 {2}.

The benefits and relationships do not end here, however. Since profiles can be constructed to reference profiles as well as base standards, future profile writing will be even easier.

NOTE: An analogy is in the construction of electronic equipment such as computers. The basic building blocks are ''components,'' such as memory chips and capacitors, which can be fabricated into larger building blocks such as printed circuit boards, which can be fabricated (with other components or printed circuit boards) into larger building blocks, such as standalone computers, which can be fabricated into larger building blocks such as department wide networks of computers, etc. Likewise, a few base standards (the basic building blocks), can be gathered together into ''component'' profiles, which can then be gathered together (with other base standards or component profiles) into larger ''platform'' profiles, which can be gathered together into larger ''application area'' profiles. (See 6.3.3.5.)

The development of profiles from the primary building blocks (base standards) results in larger building blocks (profiles) that can then be incorporated into future profiles and also into future versions of this guide.

The Importance Of Profiles

Profiles are important for a number of reasons:

- Profiles select one or more base standards or profiles and specify options and parameters within these. This provides a clear statement of specifications that describe the standards for the target functional objective(s).
- Profiles include information about the relationship between the standards included (i.e., coherency is an objective).
- Profiles are a clear method of communication about the specific standards needed for an application domain and can be used in procurement, in conformance testing, and as a target for applications development.

6.3 Guidance to Profile Writers

Responsibility: Bob Gambrel

This clause expands the concept of profiling in the manner needed by profile writers and provides detailed guidance to those writers. It includes a description of the basis for this guidance, expands on the purposes served by profiles, and finishes with more detailed guidance specifically aimed at those writing profiles.

Using this guide as a basis, profile writers can develop their own informal profiles, suited to their own needs, or formal standards bodies can develop formal, balloted profiles. This clause details the requirements that should be met by developers of profiles whether they are POSIX SPs, standardized profiles, or less formal profiles. Standardized profiles are formal profiles that meet the requirements of a sponsoring standards body. Standardized profiles that also meet the requirements for POSIX-based profiles (rules established by IEEE) are called POSIX standardized profiles (POSIX SPs.) For more information about writing POSIX SPs, see Annex A.

6.3.1 Basis for This Guidance

Many of the ideas and concepts for profiling described in this section derive from the work of ISO/IEC JTC 1 SGFS as documented in ISO/IEC TR 10000-1 {*ref*}. Some items specified in that document that are not covered here include:

— International standardization considerations

— Conformance issues

— Processes and procedures

— Maintenance

— Taxonomy

Additionally, some consideration was given in this guidance above and beyond that given in ISO/IEC TR 10000 {*ref*}:

— Standardized profiles and POSIX standardized profiles as a conceptual extension to International Standardized Profiles (ISP).

— IEEE basis, not ISO basis, for formatting rules; see Annex A

Writers of profiles following the guidance of this clause should refer to Annex A if they intend to propose IEEE acceptance as a POSIX SP and to ISO/IEC TR 10000 {*ref*} if they intend to propose acceptance as an ISP.