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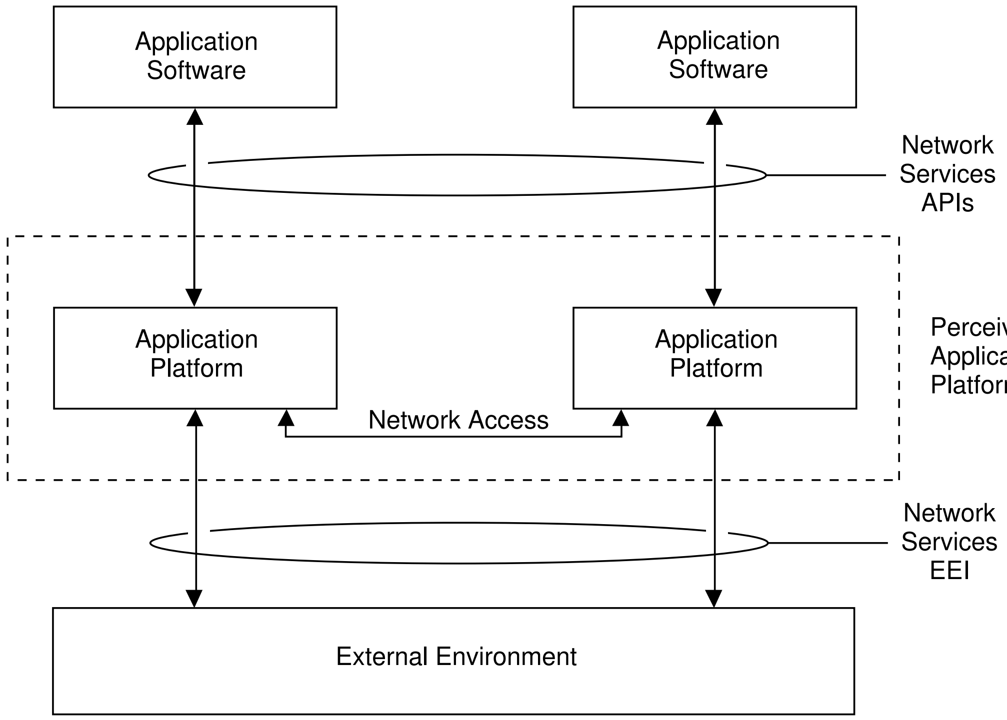

Figure 3-5 – Distributed System Environment Model

specification. Services and associated standards are then defined for each category. Finally, POSIX OSE Cross-Category Services affecting each category are discussed.

The service descriptions for each category are intended to be complete and not merely representative. Further refinement through successive releases of this document will lead to a complete specification.

3.4 POSIX Open System Environment Standards

The identification of a complete, consistent suite of standards for the POSIX OSE will, by necessity, draw from many forums. One of the criteria for judging completeness is the satisfaction of the full range of services required by the application platform user. The factors used to select standards will be described followed by the selection precedence.

Note that while the services are stated with a clear partitioning in mind, the standards reflect the current partitioning. These standards were created within disparate organizations and projects, which were in many cases carried out in isolation from the others. As a result, mapping of services to standards is not a simple relationship.

3.4.1 Factors in Standards Selection

The selection criteria for standards to be included in the POSIX OSE are based upon four concepts. Those concepts are Those concepts are openness, Stage of Completion, stability, Geographic Scope of Consensus, Functional Scope Addressed within this guide, Consistency with POSIX.1 {2}, and Availability for Unencumbered Implementation.

(1) Openness

Standards development organizations can differ from one another by virtue of their ''openness.'' That is, some standards development bodies utilize an open forum for the development of standards while other bodies use a closed forum. The result is a varying degree of consensus in the technical content of the standards across development bodies.

As a general rule, standards developed by accredited standards development organizations (all of which use an open forum) are preferred over those standards developed by bodies using a closed forum.

(2) Stage of Completion

Another factor involved in the selection of standards for inclusion in the POSIX OSE is ''stage of completion.'' That is, there is a standards development life cycle process whose effects need to be taken into account. Most standards follow a sequence from approved development, through draft, and on to approved standard.

As a general rule, where choices were made among standards, the more complete standards were favored.

(3) Stability

A third factor in determining which standards are included in the POSIX OSE is stability. This factor refers to anticipated change in the standard over time. This change may expand or contract the technical coverage of the standard.

As a general rule the more stable standards are preferred over those subject to change.

(4) Geographic Scope of Consensus

There are differences among standards development bodies with respect to the scope of their geographic consensus. Some among those bodies are formal standards bodies (i.e., accredited as standards developers by a recognized body). It is typical for those bodies to be authorized to develop standards for a particular technical topic and have their standards applicable to some defined geographic area. Formal standards development bodies are typically empowered to develop standards for either international, regional or national standards coverage.

The general rule applied in the selection of standards for inclusion in the POSIX Open System Environment is to select standards developed by those bodies that have the greatest scope of coverage. This results in a precedence for standards selection of international, followed by regional, followed by national body developed standards.

(5) Functional Scope Addressed within this guide

A specification is listed only if it addresses some service requirement listed in this guide. Standards and/or specifications listed are not, however, limited to one per set of services.

(6) Consistency with POSIX.1 {2}

Standards listed in this guide are suitable for inclusion in a profile with POSIX.1 {2}, and do not contradict that standard in any way.

(7) Availability for Unencumbered Implementation

A standard or specification is listed only if it is available for implementation to the specification and distribution of that implementation is unencumbered. The specification qualifies for inclusion in the guide even if the document itself is a salable item.

3.4.2 Selection Precedence

The list below shows the precedence of standards and specifications as used for inclusion in the POSIX OSE. The order from top to bottom is from most to least preferred.

(1) Approved standards developed by accredited international bodies

(2) Approved standards developed by accredited regional bodies

(3) Approved standards developed by accredited national bodies

(4) Draft standards developed by accredited international bodies

(5) Draft standards developed by accredited regional bodies

(6) Draft standards developed by accredited national bodies.

(7) Recognized de facto standards and specifications developed by nonaccredited bodies using an open forum

(8) Approved standards and specifications developed by nonaccredited international standards bodies using a closed forum

(9) Approved standards and specifications developed by nonaccredited national standards bodies using a closed forum.

Standards projects for which there is no draft or approved standard are never selected for inclusion in the POSIX OSE.

Only the highest precedence specification is listed or discussed in the main text. E

This guide only cites government and de facto standards and specifications in discussion of gaps in available standards.

3.5 POSIX Open System Environment Profiles

The results of Open System specification projects are collected into an expanding set of ‘‘Base Standards,’’ addressing a growing subset of functional requirements.

Profile projects then select among these base standards to create a tailored, consistent set of standards addressing a more specific type (or instance) of system or set of application software. Profiles satisfy the requirements of application ‘‘domains’’ such as office or industrial automation, transaction processing, or real-time control systems.

This framework provides a way to characterize the functionality of profile activities. The current OSI profiles tend to focus strictly on the communications EEI. Other profiles might focus on a single component or span multiple interface types.

3.6 Application Platform Implementation Considerations

Profile writers need to be aware that in an open system environment, the application platform can be decomposed into independently procurable components. While standards are interface specifications, and as such are independent of implementation, there are aspects of platform implementation or construction that may affect the specification of standards, and that profile writers may want to address.

For each case, the portion of the application platform that implements any particular independently procurable service is described as the service component. Figure 3-6 shows an application platform made up of several service components. If components interact, the specification of the interface between service components within the application platform may be standardized or nonstandard (including proprietary).

An intercomponent interface is labeled in Figure 3-6 as ‘‘System Internal Interface’’ because it may be used to assemble an application platform from multiple components. Figure 3-6 shows how a System Internal Interface is shown in the reference model.

A standards-based SII between the application platform service components addresses portability and interoperability of the application platform service components, not portability and interoperability of application software and systems.

Development of an SII would also require a consensus to emerge on the ‘‘best’’ design and implementation of system software/hardware. Very little consensus has developed on the partitioning of the platform into components and consequent allocation of function to each. In fact, this aspect of system design has been in a constant and accelerating state of innovation for decades. One of the major objectives of the API is to provide a more stable interface that decouples application software from the constantly changing platform. This enables the migration of application software to platforms based on constantly upgraded technology. (See 3.1 ‘‘Accommodation of New Information System Technology’’.)