

Consortium challenges AT&T dominance on Unix

Galen Gruman, Assistant Editor

In apparent reaction to a joint effort between AT&T and Sun Microsystems to write a new version of Unix System V that incorporates Berkeley Software Distribution 4.2 Unix, seven computer companies have formed the Open Software Foundation. A research-and-development consortium, the OSF plans to develop a standard Unix environment across several hardware platforms. If successful, the Billerica, Mass.-based foundation could challenge AT&T's recent efforts to standardize Unix through joint efforts with companies like Sun and Microsoft Corp.

The OSF was formed in response to three realizations, said John Bissell, a member of the OSF's technical marketing support staff:

- AT&T's collaboration with Sun might give Sun a lead over its competitors, which include Apollo and Digital Equipment Corp.
- Unix users are a growing and lucrative market.
- Customers want open systems so they are not locked into any vendor or hardware configuration.

The developed environment will be based on a future version of IBM's AIX operating system, which is now based on AT&T's System V Release 2. Those who license the OSF's environment will need a license from both the OSF and AT&T because it will be based on proprietary code from both organizations. The OSF plans to keep its environment compatible with future versions of System V — including the Release 4 version being jointly written by AT&T and Sun to merge System V with BSD 4.2 — and with the evolving Posix portability standard, Bissell said.

Sun advantage feared. Industry observers have said that the OSF was a response to the AT&T-Sun deal. This deal "frightened" workstation manufacturers like DEC and Apollo whose workstation sales have declined as Sun's sales have

grown, said Robert Poston, president of Programming Environments and chairman of an IEEE CASE-tools standards group. "Sun is the best workstation on the market [and] it's cleaning up that market," Poston said. "Nobody got excited about AT&T as a computer-systems vendor," he said, but when AT&T joined forces with Sun, "that was the straw that broke the camel's back."

Although "ganging up against Sun was not a contributing factor," the OSF's Bissell said, AT&T's hiring of Sun Microsystems to jointly write the merged System V-BSD Unix would give Sun a lead time of several months in product development.

When AT&T joined forces with Sun to merge Unix System V with BSD 4.2, that was the straw that broke the camel's back for Sun's competitors.

"The maximum advantage we could see is three months," said Barry Campbell, a spokesman for AT&T's Data Systems Division. "And we can avoid that by briefing [Unix System V] licensees, which include [OSF] members," he said.

Bissell said the AT&T-Sun collaboration might result in a merged Unix that requires its users to acquire Sun-developed technologies, including its new Sparc architecture. "It'll be hard for any individual hardware vendor not to have an ax to grind," Bissell said.

The OSF might not have been needed had AT&T consulted other companies with Unix versions, Bissell said. "It's one thing to have your say and lose than never be asked," he said. But, if it exists, "the bias toward Sparc is as much as

DEC's [is] toward VMS," in the OSF development countered Nancy Groves, a Sun spokeswoman.

AT&T's Campbell denied that there would be any hardware bias in the AT&T-Sun rewrite. "You cannot optimize source code for a particular hardware architecture," he said. "We want as many hardware architectures as possible to have 4.0 on it," Campbell said.

AT&T has agreed to develop application binary interfaces — binary optimizations of the System V source code — for architectures used in AT&T products, he said. These architectures include Sun's Sparc, AT&T's WE32000, and Intel's 80386 processors. AT&T has also agreed to help Motorola develop a binary interface for its 88000 RISC processor, Intergraph for its Clipper processor, and MIPS for its processor, Campbell said. AT&T is willing to help other companies, including OSF members, develop binary interfaces for their hardware, he said.

"It's still an AT&T operating system; it's not a Sun operating system," Campbell said. The relationship with Sun was a logical one, since Sun founder William Joy was responsible for the BSD 4.2 version, he said. The collaboration is one of a series of efforts to merge Unix versions, similar to the 1987 effort with Microsoft to merge Unix and Xenix, Campbell said. But unlike the AT&T-Xenix effort, the AT&T-Sun effort could affect many companies, including Sun's competitors, the OSF's Bissell said.

Lucrative market. The Open Software Foundation "is a recognition that [Unix] is going to be an income producer. They're acknowledging that it's alive and well and they want to make sure they control it if it gets up to a significant share of their income," Programming Environment's Poston said. "We feel [that Unix] is an emerging platform," said David McGorry, an IBM spokesman. "We see [Unix] as a key product," he said.

Open is in. Companies agree that customers want open systems (see Software Standards on p. 86). And everyone agrees that there should be an open-systems version of Unix, but the question is whose Unix should it be. "We feel that [the OSF] is the best way to create an open environment for a wide variety of systems," McGorry said. "We believe that an open system through a vendor-neutral process" is what the market wants, he said. AT&T believes its existing efforts will produce such open system, too, Campbell said.

"I think [OSF] is a reaction to the fact that open systems are what the customer wants," AT&T's Campbell said. But "we have some misgivings about [the OSF members'] motives. Their funding is far, far less than the major [companies] are putting into their own operating systems," he said, which goes against the OSF's goal of "converting from proprietary operating systems to open systems." On the other hand, Campbell said, "if this organization comes out with something that is useful, we'll incorporate it" into future versions of System V.

Roger Martin of the National Bureau of Standards cautiously welcomed the OSF's formation, but "I worry about losing sight of what this is all about: open systems," he said.

The environment's initial interfaces will support Posix and X/Open specifications, according to an OSF press release. Each member of the OSF will develop tools for both end users and integrated-system vendors, Bissell said. Among the standards that proposed tools will follow are the X Window user interface, the OSI data-transfer protocols, GKS graphics,

Portable Unix just the first step

Posix and other open-system efforts have made it both palatable and necessary for companies to work together on common environments like the one the Open Software Foundation intends to create, said Roger Martin of the US National Bureau of Standards and chairman of an IEEE Posix working group.

But Posix as a portable Unix-C interface is just the beginning, Martin said. "To be portable, you need to address more than the operating-system interface," he said. "We [at the standards bureau] really don't care about Unix. Unix and C were the targets of opportunity initially [for Posix] because that was what people were interested in," Martin said.

The next step is to create a generic interface specification for any operating system and any high-level language, Martin said. In exchange for support of Posix by the International Standards Organization, the IEEE Posix standards effort will focus on such generic interfaces after the current Unix-C Posix definition is finalized, he said.

Posix is part of what the NBS calls an applications-portability profile, a unified standard for portability among operating systems, databases, file and communications servers, and user interfaces. The NBS is encouraging the development of such a profile two ways, Martin said: (1) taking existing standards and evolving them and (2) creating new ones.

For example, the NBS will issue interim federal information-processing standards to fill out weak areas in Posix, including shells and tools, user interfaces, and system administration, Martin said. These interim standards will be based on draft standards and will be revised when the draft standards they are based on are finalized, he said.

The NBS has become more active in standards development because "we can't afford to wait for the final standards," Martin said. "We need them for contracts now," he said, because the new Competition in Contracts Act requires government agencies to specify standards in their requests for proposals to prevent the acquisition of closed systems.

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and SQL databases, according to the press release.

Apollo Computer, Groupe Bull, Digital Equipment Corp., Hewlett-Packard, IBM, Nixdorf Computer AG, and Siemens AG announced the formation of the OSF May 17 and have agreed to spend at least \$90 million on it over the

next three years. An eighth company, the European giant NV Philips, has said it wants to join and was negotiating with the OSF, an OSF spokesman said. AT&T declined to join the OSF. Sun Microsystems is studying the requirements to see if it might be worthwhile, said Sun's Groves.