Overview of Existing Transport APIs

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This paper provides an overview of some of the popular Programming Interfaces exposing Transport Layer Services.

Sockets

Sockets were first introduced in early 1980s with the release of Berkeley UNIX. Initially sockets were primarily exposing TCP services, *RFC-793*.

Later releases extended the support for other protocols and additional layers.

While sockets were initially UNIX centeric, socket implementations in other operating environments (e.g, DOS, VMS, ...) are readily available now.

The model of sockets pre-dates the definition of ISO transport services. In particular the model for connection establishment phase of sockets is less flexible than the ISO model.

TLI and Sockets can be viewed as two parallel approaches for exposing transport services in the UNIX environment. Sockets have probably a larger installed base of existing applications. TLI is recognized as the preferred transport interface. Software packages that map TLI to Sockets and Sockets to TLI exist.

Transport Layer Interface (TLI)

TLI was first introduced in the late 1980s with the release of AT&T UNIX System V Rel. 3.

TLI is fully conformant with the ISO transport service definition. TLI can support both TCP and ISO transport protocols as well as other transport protocols.

Although most recent distributions of UNIX support both Sockets and TLI, TLI is considered the preferred interface by many vendors. UNIX System V Rel. 4 and SUN's Solaris 2.x consider TLI the preferred Transport Interface.

Although both TLI and Sockets are supported in Novell's Netware, TLI is considered the preferred interface by Novell.

XTS

XTS is POSIX's specification of the transport API. XTS is similar to TLI. It is probably fair to say that XTS's use in the industry is less than Sockets or TLI.

Windows Sockets (winsock)

The Windows Sockets specification defines a network programming interface for Microsoft Windows which is based on the Berkeley "socket" paradigm. It includes a set of Microsoft Windows specific extensions designed to allow the programmer to take advantage of the message-driven nature of Microsoft Windows.

The most recent release of Windows sockets is Release 1.1 which is available in electronic form via anonymous FTP from *microdyne.com:/pub/winsock*.

Motorola's WaveGuide

Motorola has defined a DOS and Windows specific interface for the ARDIS wireless network called the *WaveGuide*. WaveGuide has not been patterned after any of the above mentioned interfaces.