Open Transport: Transport Independence (8/95)

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TOPIC ---

What is transport independence and how does Open Transport enable it?

DISCUSSION --

Different people judge networking in different ways. End-users focus on what
they can do using the network, and tend to select applications based on
functionality and ease of use. Network managers are interested in delivering
reliable network services in a cost efficient manner. Developers want to create
compelling functionality for users, but are strongly influenced by the
availability of networking infrastructure.

Unfortunately, with current networking tools and systems, developers are forced
to tie their applications to specific network infrastructure requirements --
driven by their API choices. This creates a potential conflict between
individual and organizational needs. If network managers dictate protocols to
control support costs, users may not have access to the applications they need.
If user dictate specific applications, they may increase support costs for the
network manager by "dragging along" specific network infrastructure
requirements. Developer are stuck in the middle, making decisions for both users
and network managers by selection of an API at compile time.

Transport independence is a concept that breaks this undesirable linkage. When
implemented, it allows developers to write to a uniform set of APIs, users to
focus on selecting the best applications, and network managers to make
independent decisions about network infrastructure, all on an ongoing basis.

Open Transport brings together three technologies to support the development and
deployment of transport independent applications on the Mac OS:

• A unified set of cross-platform, standards-based APIs for all networking and
communications protocols. For example, applications can send and receive data
over an AppleTalk LAN or the TCP/IP-based Internet using the same programming
interfaces.

• A dynamic link-and-load architecture and set of protocols. Protocols are
loaded and unloaded on demand, conserving system resources, and making it
possible to substitute say, TCP for ADSP at the application launch time.

• An addressing and naming support toolbox. For example, applications can open a communications end-point by name (such as, "seeding.apple.com" or "printer16:LaserWriter@sales". Open Transport will automatically provide the appropriate name-to-address mapping services (DNR, NBP, and so on). Together these support the creation of transport independent applications on the Mac OS.

However, not all Open Transport applications are transport independent. While Open Transport provides the necessary foundation, there are certain guidelines and programming practices required for developers to create transport independent applications. For example, most protocols have many features in common -- but also some features that are protocol-specific. If an application depends on a protocol-specific feature, then it will depend upon that protocol as well.

In some cases it may be appropriate to develop a transport-specific application. For example, an MBone client is currently only useful when configured for communication using TCP/IP.

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