Understanding IBM's System Network Architecture or "Through A Glass Darkly"

A Tutorial

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System Network Architecture (SNA) is IBM's strategic direction with respect to data communications.

SNA is the means whereby multiple dissimiliar hardware platforms can share information. Access is provided for terminals, personal computers, and systems to communicate with each other.

The flexibility of SNA has steadily increased since its introduction in 1974. In addition to reviewing the evolution of SNA, one of the latest enhancements will be discussed - specifically peer-to-peer communications.

It will become evident from this discussion that SNA is a hierarchical communication technology. Not until the developments introduced in 1987 was true peer-to-peer communication possible in an SNA environment.

The major topics discussed here will be:

1. Evolution of SNA

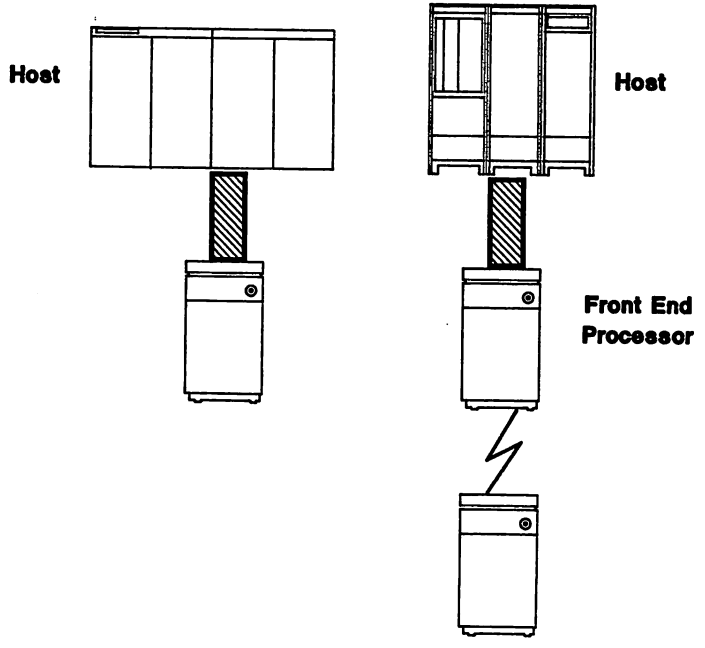
2. HP and IBM Network Comparisons

3. SNA Terminology

4. SNA and the ISO Model

5. Appendix - Creation of a Connection Between an IBM Host and an HP3000

Evolution of SNA



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Evolution of SNA
1974 - 1976

In the early 1970's, IBM had a proliferation of computer systems on the market, plus a myriad of communication software packages and protocols running on these systems.

All IBM computers could not communicate with each other due to this mixture of incompatible hardware and software.

SNA was introduced in 1974 as a way of solving this problem. The objective was to provide a ommunications method whereby all IBM computers could talk to each other, and all IBM terminals could talk to any computer.

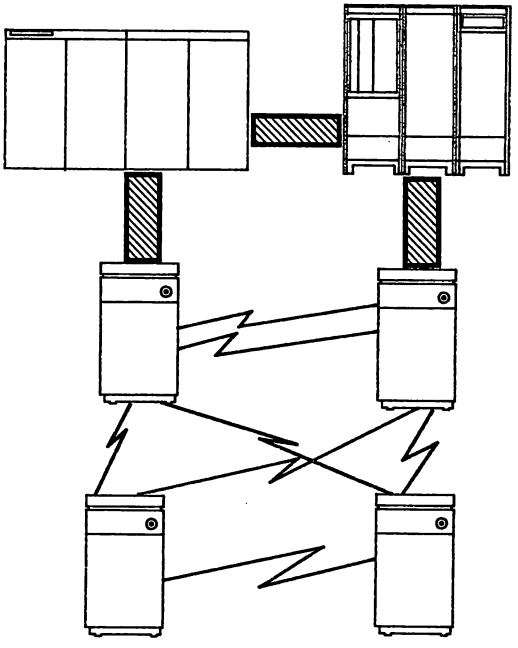
SNA's basic hardware configuration is reflected in the 1974 picture - an IBM 370 host and a front-end communications processor. Through the front-end processor (FEP), communication links are provided to remote clusters of terminals.

In 1976, the FEP's could be distributed and linked with high speed lines. Today, these are usually 56 kilobit/sec (kb) digital leased lines.

The advantage of the front end processor was that it could handle many of the basic communication tasks for large remote clusters of terminals, or remote groups of mainframes. This not only reduced the processing requirements for the main FEP, but reduced communications overhead on the leased line.

This will become more evident after the discussion of the ISO model and SNA. As a preview, the FEP's handle the communications protocols and overhead of layers 1-4 of the ISO model.

Evolution of SNA



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Proactive Network Diagnosis

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