



COMMUNICATIONS

- Network software for Ethernet™-based LANs
- Allows CTIX-based systems to communicate with each other, and with non-Convergent systems supporting the TCP/IP protocols
- Provides file transfer, remote logon, network status, and network management
- Enhanced network management capability
- Compatible with Department of Defense TCP/IP protocols

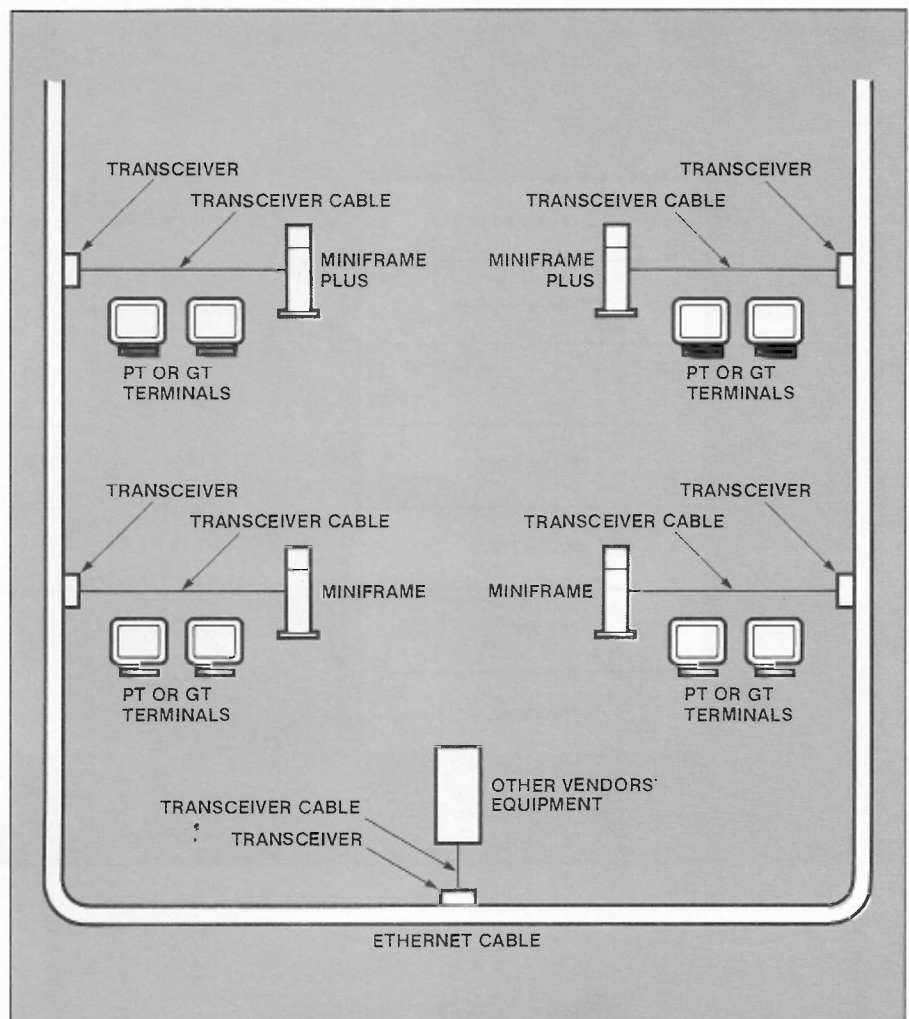
CONVERGENT TECHNOLOGIES

CTIX TCP/IP Local Area Networks

The Convergent™ TCP/IP software package allows CTIX™ users to configure high-speed Local Area Networks (LANs), and provides an efficient means of exchanging information and sharing resources among diverse computing systems within an office, building, or campus environment.

TCP/IP allows users to share peripherals, data, and software programs over the network. Programs and data can be managed by a single operator at a central site, by operators at individual sites, or both. Users can transfer files between nodes in the network, establish remote terminal connections, and perform network diagnostics without additional programming effort.

TCP/IP software operates on the CTIX operating system. It uses an Ethernet™ Local Area Network as the physical network link between computer systems.





APPLICATION LAYER UTILITIES

The Application Layer Utilities within the CTIX TCP/IP software package support the following functions:

File Transfer Program

The File Transfer Program allows users to manipulate files on multiple systems. It provides both a user command interface to initiate file transfers, and an implementation of the standard File Transfer Protocol (FTP). The File Transfer Program can also be used to perform the following operations on a remote node:

- Create a directory
- Delete a directory
- Delete a file
- Rename a file
- List the directory
- Append a remote file to a local file

Virtual Terminal Facility

The Virtual Terminal Facility allows any terminal user on the network to log in remotely to any other system in the network. This allows the remote user to have the same access to programs and resources on a system as do users with terminals directly attached to that same system. The Virtual Terminal Facility allows the physical terminal characteristics to be controlled by the system to which the terminal is physically attached, so the remote system does not need to worry about these issues. Thus, for example, a user of a PT™ or GT™ terminal attached to a MiniFrame™ can log in remotely to another machine which is not aware of the physical characteristics of the PT and GT terminals, or the line protocols they use in conjunction with the MiniFrame.

Remote Command Execution

The remote command execution facility gives users the ability to execute commands on a remote node. Commands are executed on the remote node immediately upon receipt. The resulting output may be displayed on local or remote terminals or used as input to other commands.

NETWORK ADMINISTRATION

Network Status

The Network Status Command allows users to display various network-related data structures, including local and remote addresses, queue sizes, and internal network status information. The Network Status Command can also be used to display a table of cumulative statistics including packets transferred, errors, collisions, and the status of available routes.

Network Management

The CTIX TCP/IP package provides the network manager with a tool to control and manage the network effectively. It includes the ability to add or delete a host from the network, and to modify a host's definition on the network. It can be used to grant or deny permission to access network resources, to individual users, or to all users of specific systems. The Network Management Facility is menu driven and easy to use.

SYSTEM CONFIGURATIONS

MiniFrame and MiniFrame Plus™

The TCP/IP implementation on both the MiniFrame and MiniFrame Plus supports a single Ethernet interface on each system. Requirements for installation are:

SOFTWARE

CTIX 3.2 or higher
TCP/IP, Part Number SNC-1020

HARDWARE

MiniFrame or MiniFrame Plus with:
1 MB RAM (minimum)
Ethernet Expansion Board
Ethernet Coaxial Cable
Transceiver Cable
Transceiver



ARCHITECTURE

The CTIX TCP/IP package consists of four major components:

Transmission Control Protocol (TCP) — provides the user program interface to send or receive data.

Internet Protocol (IP) — provides the ability to move packets of data through an interconnected set of networks.

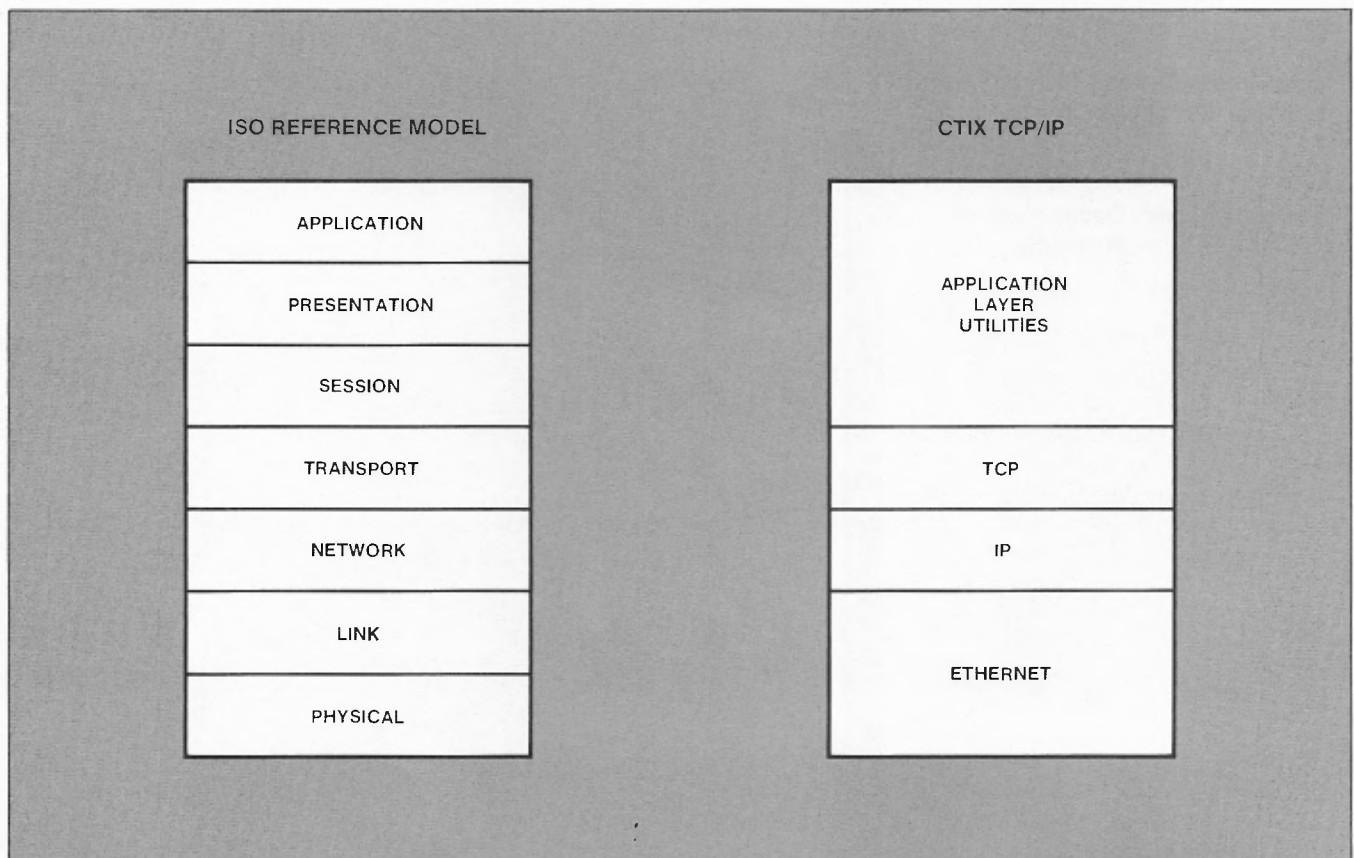
Application Layer Utilities — provide standard functions including file transfer, remote logon via virtual terminal facilities, and remote command execution.

Network Manager — provides a tool to manage the Local Area Network. Functions include the ability to add and delete nodes from the network, to modify the definition of hosts on the network, and to grant or deny permission to access certain network resources.

The International Standards Organization Open Systems Interconnection model (ISO OSI) defines seven key layers in a complete network architecture. The Xerox®/

DEC™/Intel® Ethernet standard, also known as IEEE 802.3, provides the definition of the lowest two layers of this model, using a baseband transmission scheme that allows data to be transferred at high speeds between computing systems of varying architectures, in a vendor-independent manner. The TCP and IP protocols, developed under the sponsorship of the U.S. Department of Defense (DoD), specifically address the Transport and Network layers of the ISO model. The application Layer Utilities correspond to the highest three layers of the ISO scheme. Systems complying with the TCP/IP and Application Layer protocols can share data files, printers, terminal connections, and other data processing resources. A user on one system can access other systems on the network.

The CTIX implementation of the TCP/IP protocols is consistent with the Department of Defense standard for all DoD networks.





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