

New Product Announcement

TCP/Link PLUSTM

Introduction

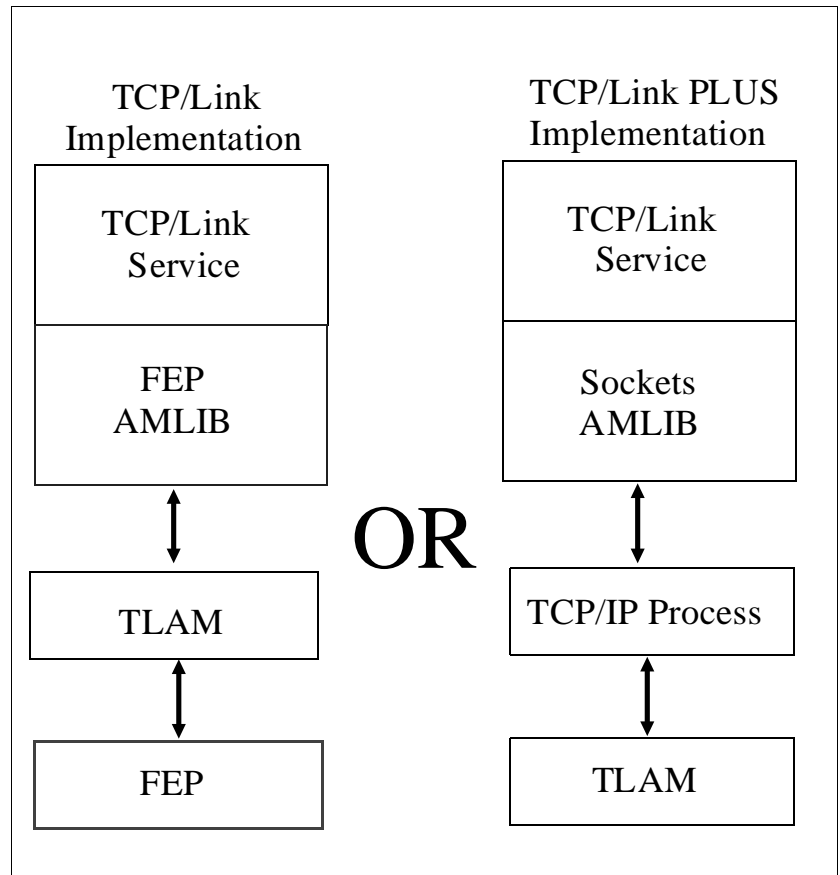
Failsafe Computer Systems' TCP/Link product has been delivering high performance and high functionality TCP/IP services to customers since 1987.

We are announcing a new generation of the TCP/Link product line, which now includes not only the traditional high performance Front End Processor implementation, but also availability for most of the product's features using Tandem's TCP/IP product .

This collection of services now available over Tandem's TCP/IP has been designated TCP/Link PLUS.

Highlights of TCP/Link PLUS include:

- Availability of all major product features in both a high performance version as well as the Tandem TCP/IP version.
- A major new product feature that implements Open Systems Standard Remote Procedure Call to facilitate client/server applications.
- DEC VT terminal support for 6530 applications.
- Programmatic FTP allowing downloading, uploading, or crossloading files over the TCP/IP network.



TCP/Link services are now available in both the high performance FEP version as well as Tandem TCP/IP version.

- Vendor independent, Open Systems Standard support for 6530 terminals connected to terminal servers.
- Comprehensive bidirectional print spooling support.

This document outlines the key features of this new product announcement.

Remote Procedure Call

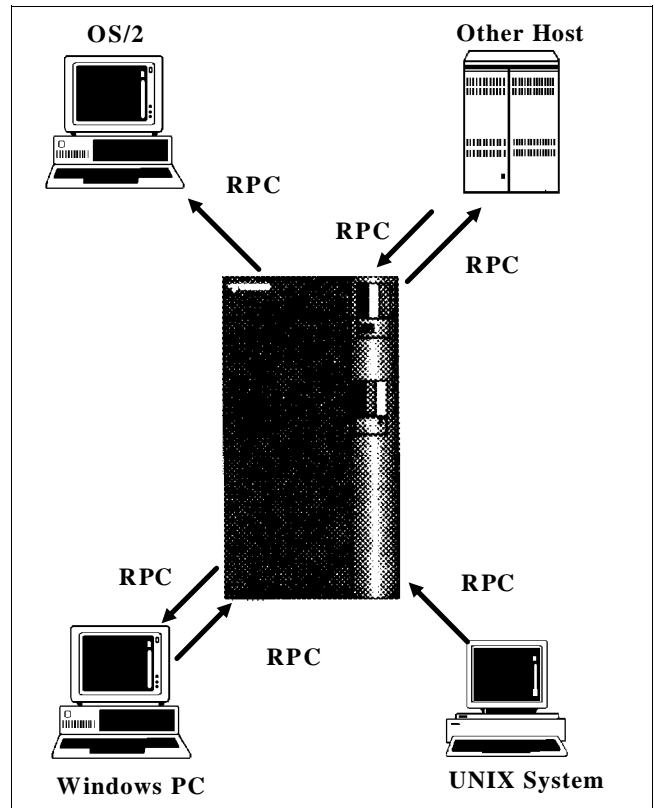
- Open Systems Standard Remote Procedure Call via RPC/XDR
- Tandem system may be client, server or both
- Significant performance improvement over other client/server products
- Guardian enhancements to support multithreaded applications
- Optional Windows Sockets (WINSOCK) PC implementation
- PC may concurrently execute client/server application and terminal emulator
- Wide deployment and implementation assures interoperability

Remote Procedure Call is an implementation of Sun Microsystems's ONC RPC/XDR.

RPC/XDR was originally devised by Sun as part of their Open Network Computing strategy to solve the problems concerning how programs can transparently call procedures running on another machine over the TCP/IP network.

Since its original introduction, RPC/XDR has become the leading remote procedure call mechanism in use over TCP/IP networks. Its wide adoption and deployment combined with its technical and commercial maturity assures interoperability with a wide variety of hosts, workstations, and PC's in any environment.

A significant advantage of RPC/XDR is the fact that it is a recognized and formal industry



Tandem resident applications may be a server, a client, or both using Open Systems Standard RPC/XDR

standard. This implementation fully complies with those standards and employs no proprietary or nonstandard technology as do other client/server products in the Tandem marketplace.

The Tandem system may be not only a server, but also a client. In fact, applications may be written to act as both a client and a server, an important consideration with respect to issues concerning the handling of unsolicited messages.

Another advantage offered by the product is its performance profile. Designed from its very inception to be used in conjunction with TCP/IP, it offers significant performance improvements when compared to other client/server products in the Tandem marketplace. One such comparison showed that this

product yielded better than an order of magnitude improvement.

While this product fully conforms to the programming paradigm incorporated in ONC RPC/XDR, it also has been enhanced to offer optional Guardian multithreading extensions. These extensions allow the implementation of applications that concurrently execute multiple RPC requests, enhancing performance in the Guardian environment.

A unique feature of the product offering is the fact that an optional Windows Sockets (WIN-SOCK) implementation is also available. Targeted toward accounts which may not have access to a complete RPC implementation from their PC TCP/IP vendor, this product will fill that potential void. It provides a complete implementation for any Windows PC that is running a Windows Sockets compliant TCP/IP stack, allowing that machine to act as a client, a server, or both while at the same time executing other tasks such as a terminal emulator.

DEC VT Terminal Support

- Access 6530 applications from DEC VT terminals
- Supports actual VT terminals, VT emulators, or XTERM
- Block and conversational mode support
- Employs standard TCP/IP TELNET protocol

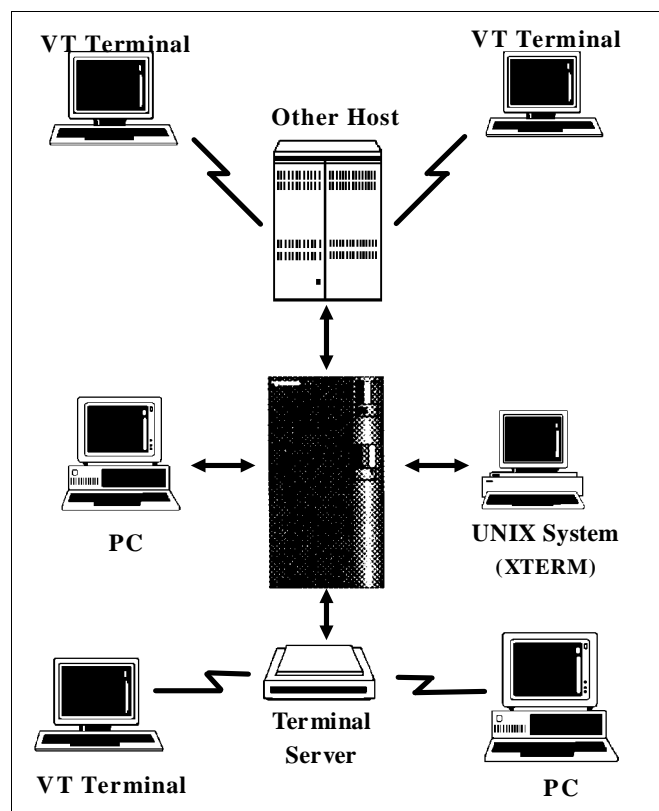
VT Terminal Support allows transparent access to any Tandem resident 6530 application programs from DEC VT terminals or emulators.

The terminal or emulator may be connected to another host (such as a DEC or UNIX system) or to a terminal server.

Alternatively, the same service may be obtained from any PC or workstation running a VT terminal emulator or XTERM.

The VT Support software component translates the VT data stream to equivalent 6530 format on input from the network, and from 6530 to VT format on output. As a result, the Tandem resident applications "see" only 6530 data streams and the VT terminals "see" only VT data streams, insuring their correct operation.

Full 6530 emulation is afforded to the VT terminal user including such features as both conversational and block modes of operation, multi-page operation in both modes, 6530



6530 applications are accessible from DEC VT terminals, VT emulators, or XTERM

graphic character support, blinking fields, protected and unprotected fields, etc.

Any Tandem resident 6530 application may be accessed using this product, including block mode Pathway applications. No changes to the application programs are required.

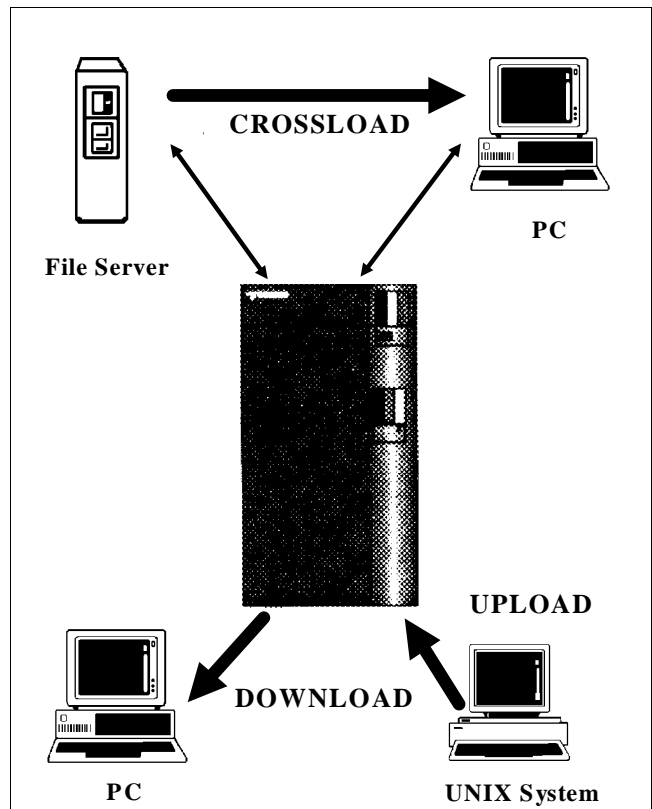
Programmatic FTP

- Downloads, uploads, or crossloads files over TCP/IP network
- Provides application programming interface to standard TCP/IP File Transfer Protocol
- Asynchronous design permits easy application integration
- Multithreaded implementation permits multiple concurrent transfers
- Auditable interface assures outcome of request is always known

Programmatic FTP (PFTP) allows the integration of file transfer capabilities into your application software.

PFTP provides an application programming interface (API) to the File Transfer Protocol, allowing application systems running on the Tandem host to effect the transfer of files between any two machines on the TCP/IP network. One of these machines may in fact be the Tandem system running PFTP, but need not be.

PFTP is an ideal tool to facilitate the implementation of a controlled environment where the distribution of files throughout the network can



Programmatic FTP implements automated file uploads, downloads, or crossloads.

be managed from a Tandem resident application system. Possible applications of PFTP include automatic, unattended upload, download, or crossload of files, check-in or check-out of files from a file server, automated update of data files throughout the network, software distribution to networked PC's, or file transfers based upon any "trigger" that you might want to implement.

An important feature of PFTP is that it is completely auditable. For every request submitted to it, PFTP provides a corresponding completion record accessible to the requesting application. This completion record specifically indicates success or failure of the request and, if it failed, the detailed cause of the failure.

PFTP has been implemented as a multi-threaded process so multiple concurrent

requests are processed simultaneously for maximum performance.

Additionally, PFTP's application programming interface has been designed to be asynchronous in nature. Applications requesting PFTP services may be implemented to either wait for completion notification or continue on performing other work, checking for completion at a later time.

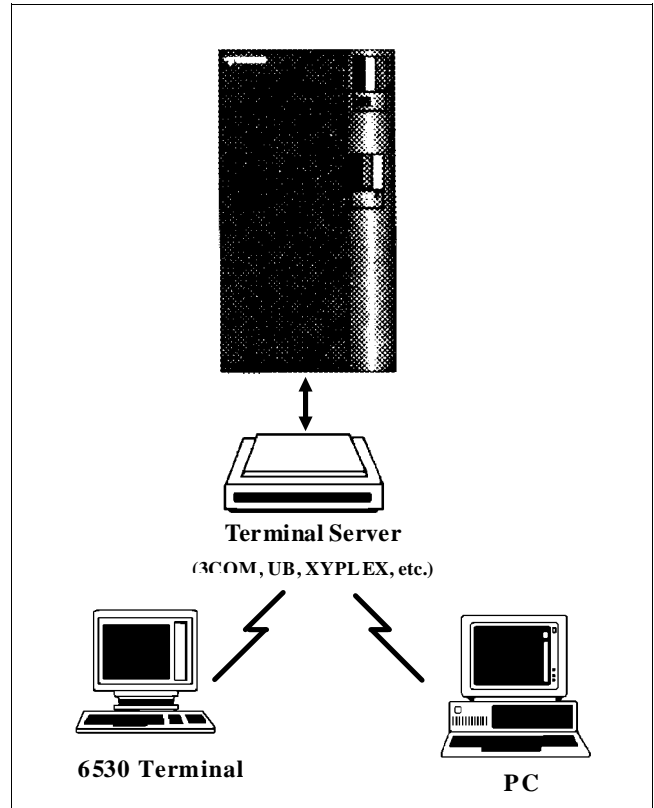
Terminal Server Support

- 6530 terminal support via terminal servers
- Supports all leading terminal server manufacturers
- Does NOT require use of a specific manufacturer's equipment or proprietary solutions
- Supports actual 6530 terminals or emulations
- Block and conversational mode support
- Employs standard TCP/IP TELNET protocol

The Terminal Server Support allows access Tandem resident 6530 applications via the TCP/IP network using virtually any commercially available terminal server. It does NOT require the use of proprietary protocols or a specific terminal server manufacturer's products.

Devices supported include either actual 6530 terminals or any device running a 6530 emulation.

Both conversational and block modes are fully supported.



Use virtually any terminal server to support 6530 terminals or emulators

Each terminal, PC, or workstation is simply connected to the terminal server using asynchronous cabling. The terminal server provides the conversion to the TCP/IP TELNET protocol.

The host resident software provides the transparent application interface, allowing access to application programs without any changes being made to them.

This terminal server approach is ideally suited to applications involving actual 6530 terminals or sites where departmental concentrations of PC's and terminals can benefit from the lower per connect cost afforded by the terminal server.

Consistent with Failsafe's policy of Open Systems Standard and vendor independent solutions, virtually any commercially available terminal server may be employed, including

products from vendors such as 3COM, TRW, Ungerman Bass, Xyplex, and others.

Print Spooling Services

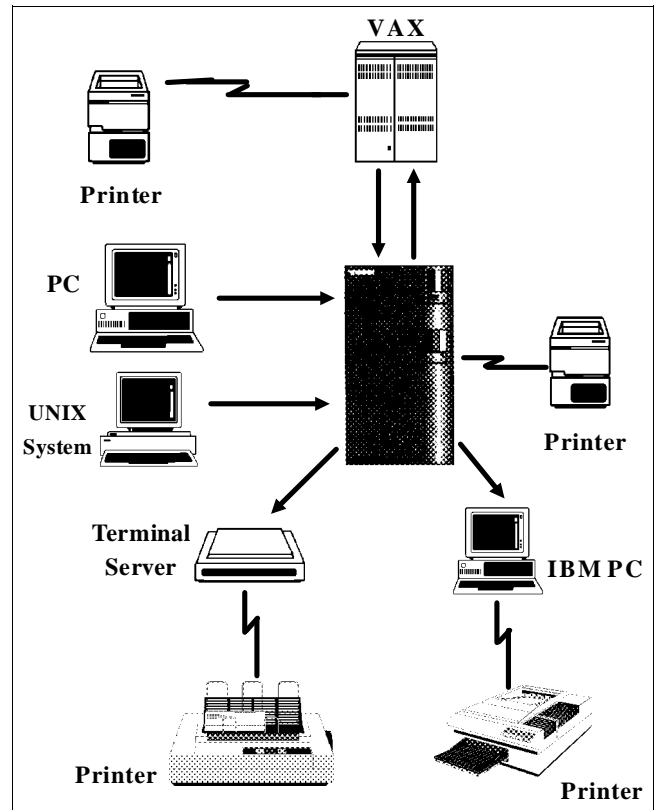
- Bidirectional print spooling capabilities
- Tandem system may be client, server or both
- Open Systems Standard Berkeley Line Printer Protocol
- TELNET mode permits spooling to terminal server connected printers
- Optional Windows Sockets (WINSOCK) PC software allows spooling to PC connected printers
- Fully integrated with Tandem Spooler

TCP/Link PLUS provides comprehensive, bidirectional support for your printed report distribution requirements.

Reports may be distributed from the Tandem system to network printers or the Tandem system may be employed as a centralized print server for network users.

Tandem resident applications programs may generate print output to the Tandem Spooler identically to the way they would send it to a directly connected line printer. TCP/Link PLUS software components provide for the automatic and transparent routing of this traffic to the network printer.

Using Open Systems Standard Berkeley Line Printer Protocol, the report may be directed to another host, a UNIX workstation, a PC



Comprehensive, bidirectional print spooling support is provided for complex network environments.

operating as a print server, or to any other device supporting a server implementation of the Berkeley Line Printer Protocol. The actual printer may be a serial or parallel printer of any kind.

Alternatively, TCP/Link PLUS also supports outbound spooling using standard TELNET protocol to accommodate destination devices that do not support Berkeley Line Printer Protocol. This approach is particularly well suited to printers connected to the network via commercially available terminal servers or printer interface devices of any kind (such as bus and tag interface devices designed to support high speed laser printers).

An additional feature is the ability to deliver reports to printers connected to individual user PC's. An optional software component may be run on user's Windows PC's which accepts the

data stream from the Tandem host and delivers it to any serial or parallel printer connected to the PC. Implemented as a background task under Windows, no user intervention is required. It employs the Windows Sockets (WINSOCK) interface so it may be run with any vendor's WINSOCK compliant TCP/IP stack. The PC user may concurrently perform other tasks, such as running a terminal emulator, a client/server application, or a local application. (This feature is available in the 3rd quarter of 1995.)

In addition, the Tandem system may be utilized as a centralized print server, making use of the high speed printer(s) connected to this system to print reports generated by network users.

Using Open Systems Standard Berkeley Line Printer Protocol, the report may be sent by another host, a UNIX workstation, a PC, or from any other device supporting a client implementation of the Berkeley Line Printer Protocol. The actual printer may be a serial or parallel printer of any kind supported by the Tandem Spooler.

All software components comprising the TCP/Link PLUS Print Spooling Services have been fully integrated with the Tandem Spooler. No changes are required to application programs. All SPOOLCOM commands are supported to allow operational control similar to the operational control afforded to printers directly connected to the Tandem system.



"Excellence in Action"



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