High Speed TCP/IP Protocol Stack

Product Overview

PrCONNECT/Pro is a reentrant embedded TCP/IP protocol stack supporting a wide range of Internet protocols including PPP. It is RFC compliant and features a modular design that allows developers to minimize code size in the target environment. PrCONNECT/Pro is pre-configured and ready-to-use with PrKERNELv4 and eT-Kernel. Sample Ethernet drivers and applications are included.

Descriptions

- **Platform Independence:** PrCONNECT/Pro is designed to be independent of operating systems, processors, and network controllers, and can be easily ported to your target system. PrCONNECT/Pro is written mostly in C language and is independent on the CPU. Modular architecture from device drivers and OS-dependent sections make it simple to migrate PrCONNECT/Pro into a different environment.

- **T-Kernel:** On eT-Kernel, you can run PrCONNECT/Pro by implementing it either as a library, or as a T-Kernel subsystem. Even if implemented as a T-Kernel subsystem, the interface provides Socket API. Additionally, you can operate PrCONNECT/Pro from a loadable system program or process application, when you implement it as a T-Kernel subsystem. You can also dynamically add loadable drivers to PrCONNECT/Pro.

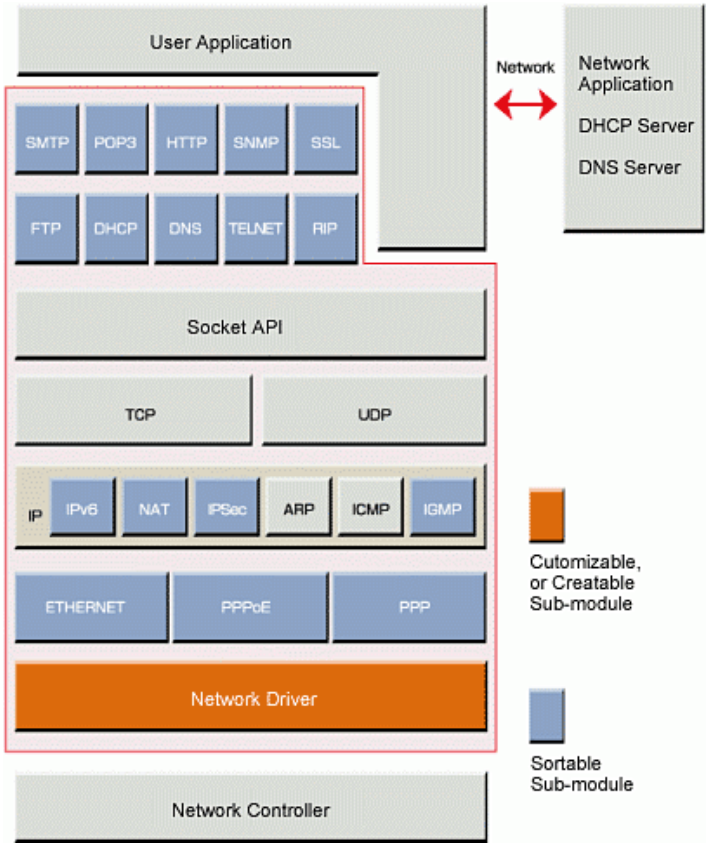
Key Features

- **BSD Socket Interface availability:** The BSD socket interface is available in PrCONNECT/Pro, allowing you to easily reuse the existing UNIX- and Linux-based network applications, and also utilize the network application expertise of your UNIX/LINUX engineers.

- **Highest-class performance:** PrCONNCET/Pro achieved over 74Mbps throughput at the TCP /IP protocol level.

- **IP Multicast compatible:** PrCONNECT/Pro can send and receive files using IP Multicast, which transmits datagrams from one source to multiple designated destinations over the network. This is ideal for distributing large-sized media data such as movies or music.

- **Configurable memory size:** You can adjust the entire code size and save memory by using the function-selecting switch. For example, when DHCP client/DNS client/IP Multicast/AutoIP are not needed in your application, you can choose not to include these functions by using the function-selecting switch during system configuration.



PrCONNECT/Pro Architecture

Standard protocol package

PrCONNECT/Pro includes the following protocols:

- DHCP client / DNS client / FTP client / FTPD / TELNETD
- TCP / UDP
- IPv4 / ARP / ICMP / IGMP / Auto IP
- TFTP

Add-on Package

Optional protocols are available to meet your application requirements. The IPv4/IPv6-compatible dual stack will be available soon.

- **PrCONNECT/Pro PPP:** PPP./Multilink PPP
- **PrCONNECT/Pro MAIL:** SMTP, POP3
- **PrCONNECT/Pro HTTPD:** HTTP server, HTTP server/SSL (https server), HTML compiler
- **Other:** DNS server, DHCP server, SNMPv2c, SNMPv1/v2/v3, SSL, IPSec, IKE Library, RIPv1/v2, NAT, PPPoE,

Sample drivers and applications

The following source code samples for device drivers and applications are included in the standard package:

- Device driver for Ethernet
  - ◊ TMS320DM644x (TI) built-in Ethernet controller
  - ◊ AM79C973 (AMD) external Ethernet controller
- FTP sample application (server/client)
- TELNET sample application (server).

Compatible Products

- **eBinder:** Integrated development evelopment
- **PrKERNELv4:** Compact realtime multitasking kernel (µITRON4.0-compliant)
- **eT-Kernel:** T-Kernel-based realtime multitasking kernel
- **IEEE802.11a/b/g WLAN Driver:** IEEE802.11a/b/g compliant wireless LAN driver

Licensing

Royalty-free, source code license.
OEM license is also available.

RFC Compliancy

Protocol	RFC	Title
General	1122	Requirements for Internet Hosts
TCP	793	Transmission Control Protocol
	1323	TCP Extensions for High Performance
	2018	TCP Selective Acknowledgement Options
	2414	Increasing TCP's Initial Window (Obsoleted by RFC3390)
	2581	TCP Congestion Control
UDP	768	User Datagram Protocol
IP	791	Internet Protocol
	894	A Standard for the Transmission of IP
	919	Broadcasting Internet Datagrams
	922	Broadcasting Internet datagrams in the presence of subnets
	950	Internet Standard Subnetting Procedure
	1042	Standard for the transmission of IP
	1112	Host Extensions for IP Multicasting (IGMP)
	2269	DOCSIS Cable Device MIB
	2563	DHCP Option to Disable Stateless Auto-Configuration in IPv4 Clients
ARP	826	Ethernet Address Resolution Protocol
ICMP	792	Internet Control Message Protocol
	1191	Path MTU discovery
Ethernet	894	Standard for the Transmission of IP Datagrams over Ethernet Networks
	1042	A Standard for the Transmission of IP Datagrams over IEEE 802 Networks
PPP	1661	Point-to-Point Protocol
	1662	PPP in HDLC-like Framing
	1144	Compressing TCP/IP headers for low-speed serial links [VJ Compression]
	1332	The PPP Internet protocol Control Protocol (IPCP)
	1877	PPP Internet Protocol Control Protocol Extensions for Name Server Addresses (Options 129, 131 supported)
	1994	PPP Challenge Handshake Authentication Protocol (CHAP)
ECHO	862	Echo Protocol
DNS	1034	Domain names - concepts and facilities
	1035	Domain Names - Implementation and Specification
	2316	Dynamic Updates in the Domain Name System
DHCP	1541	Dynamic Host Configuration Protocol (Obsoleted by RFC2131)
	2131	Dynamic Host Configuration Protocol
	2132	DHCP Options and BOOTP Vendor Extensions
	3046	DHCP Relay Agent Information Option
BOOTP	951	Bootstrap Protocol
FTP	959	File Transfer Protocol
TELNET	854	Telnet Protocol
Mail	821	Simple Mail Transfer Protocol
	822	STANDARD FOR THE FORMAT OF ARPA INTERNET TEXT MESSAGESPost Office Protocol - Version 3
	1869	SMTP Service Extensions
	1939	Post Office Protocol - Version 3
	2045	Multipurpose Internet Mail Extensions (MIME) Part One: Format of Internet Message Bodies
	2046	Multipurpose Internet Mail Extensions (MIME) Part Two: Media Types
	2047	MIME (Multipurpose Internet Mail Extensions) Part Three: Message Header Extensions for Non-ASCII Text
	2048	Multipurpose Internet Mail Extensions (MIME) Part Four: Registration Procedures)
	2049	Multipurpose Internet Mail Extensions (MIME) Part Five: Conformance Criteria and Examples
HTTP	1866	Hypertext Markup Language - 2.0
	1867	Form-based File Upload in HTML
	1945	Hypertext Transfer Protocol -- HTTP/1.0
	2616	Hypertext Transfer Protocol -- HTTP/1.1
TFTP	1350	The TFTP Protocol (Revision 2)

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