TCP/IP Networking with Forth

Forth with a pre-existing TCP protocol stack

If Forth is being used on top of an operating system that already provides TCP/IP networking, then it is only necessary to provide a Forth interface to the network stack in order to write network applications.

I described an implmentation of this type of interface for Wil Baden's **ThisForth** and Dirk Zoller's **PFE** at the **1994 FORML Conference** (Carter, 1994, *Internetworking with Forth*, Proceedings of the 1994 FORML Conference, pp. 50-71).

TCP/IP interface for PFE (tested on V 0.9.9)
shell archive, compressed tar, Gnu compressed tar.
TCP/IP interface for ThisForth
shell archive, compressed tar, Gnu compressed tar.

A **TCP/IP interface for GForth** is available through a licensing arrangement from Taygeta Scientific

Marcel Hendrix has an interface for **iForth** on NT or Linux

- Others have done similar things with **Win32For** (no reference available at the moment).

Native Forth implementations of TCP/IP

If there is no underlying TCP/IP stack available or Forth is being used in an embedded environment, then a **native Forth TCP/IP** protocol stack is desired.

Taygeta Scientific has developed a **native Forth TCP/IP protocol stack** that is written *entirely* in **ANS Forth**. This implementation includes **IP**, **TCP**, **UDP**, and **ICMP**. It uses **SLIP** or **PPP** interface layers and provides an API based upon the **BSD socket interface**. It is designed to be easily subsettable, by setting some compiletime switches, so that only a portion of the full protocol can be used if that is desired.

The compiled size of the TCP/IP stack depends upon the subsets that are compiled into your applications. An example for 32-bit Forth system with standard buffers sizes gave the following sizes in bytes,

Protocol	SLIP	PPP
IP only	30,836	38,628
ICMP,IP	35,052	42,844
UDP,IP	34,076	41,868
UDP,ICMP,IP	39,036	46,828
TCP,IP	42,312	50,104
TCP,ICMP,IP	46,928	54,720
TCP,UDP,IP	45,552	53,344
TCP,UDP.ICMP,IP	50,912	58,704

This software is currently undergoing final testing and documentation. It will be available for licensing in the near future. Contact us for details.

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