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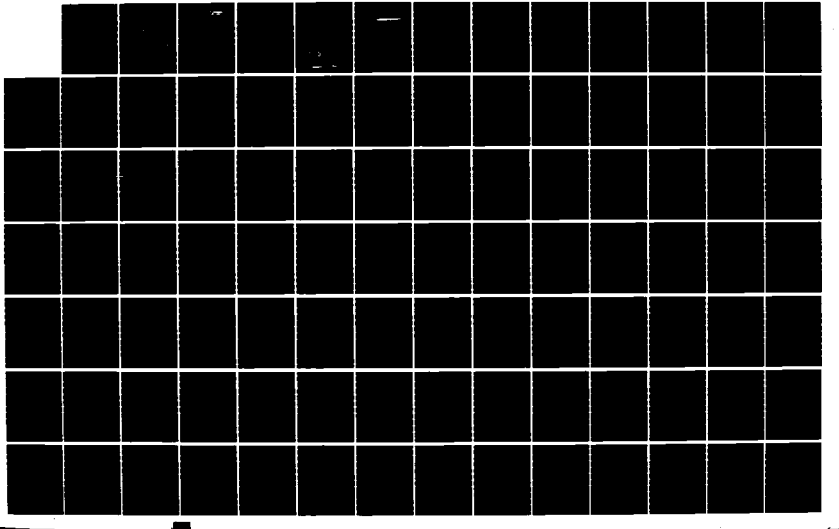

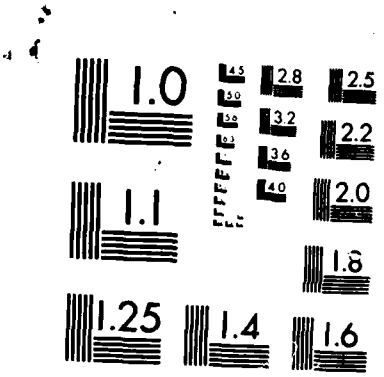

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TCP/IP IMPLEMENTATIONS AND VENDORS GUIDE

FEBRUARY 1986

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19. ABSTRACT (Continue on reverse if necessary and identify by block number)

This document is the Feb. 1986 update of the vendors guide which provides information about the implementations and products associated with the Defense Data Network TCP/IP internet protocols. The guide is divided into two sections. The first addresses TCP/IP (Transmission Control Protocol/ Internet Protocol) software implementations by machine type, and the second is about hardware implementations. Each section lists the products alphabetically and provides information such as their history, documenation, distributor, contact person, and other facts. This guide does not specifically endorse or recommend any product.

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E. Redfield
SRI International
333 Ravenswood Ave.
Menlo Park, CA 94025

DEFENSE COMMUNICATIONS AGENCY

TCP/IP IMPLEMENTATIONS AND VENDORS GUIDE

FEBRUARY 1986

Editors:

Ole Jacobsen
Francine Perillo

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Per Ms. E. Redfield.
13 March 1986

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QUALITY INSPECTED

It is the intent of the DDN Network Information Center (NIC) to make the TCP/IP Implementations and Vendors Guide widely available to DDN users at minimal cost. It may be obtained in hardcopy or machine-readable form from several sources. [redacted]) Non-military users such as contractors, systems personnel, and researchers may obtain hardcopy from the NIC by sending $10.00 ($13.00 overseas) to the DDN Network Information Center, SRI International, Room EJ291, 333 Ravenswood Avenue, Menlo Park, CA 94025. Copies are available online to DDN users who have access to File Transfer Protocol (FTP). The file NETINFO:TCP-IP-IMPLEMENTATIONS.TXT contains an ASCII sequential version. This file is updated on a continual basis. The hardcopy version is produced twice a year, in February and July.

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Date: February 1986

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INTRODUCTION

This is a guide to implementations and products associated with the Department of Defense (DoD) Defense Data Network (DDN) TCP/IP protocols. It is published *for informational purposes only* by the Network Information Center (NIC) at SRI International on behalf of the Defense Communications Agency (DCA), Defense Communications Systems (DCS) and in no way endorses or officially recommends any implementation or product on the part of the Defense Communications Agency, the Defense Advanced Research Projects Agency (DARPA), the NIC or DoD. It is not complete. Omission of any vendor or implementor has no significant implication, other than that the NIC has no information about that vendor or implementor, or that the information was not available at the time of this printing. Likewise, only completed fields of the product templates are included, and unfilled fields have been deleted to conserve space. Anyone planning to use either a product or an implementation is urged to do their own investigation of the details, costs, and support of the product.

This Guide is divided into software implementations (listed alphabetically by machine type) and hardware implementations (listed alphabetically by company), and multiple machine implementations.

For your convenience in locating particular implementations, an index is provided. The index is sorted by O/S, machine type, company name and other important keywords such as "X.25" and "Gateway".

Vendors who wish to have their TCP/IP products tested and qualified for use on the DDN should contact Code B613, the Development, Test and Evaluation Branch of the DDN DCS for details.

Request for comments (RFCs) and Internet Experimental Notes (IENs), referred to in this document, are available from the NIC. Network users may obtain online copies from the SRI-NIC.ARPA host through the File Transfer Protocol (FTP). Filenames are of the format RFC:RFCnnn.TXT (where nnn is the number of the RFC) and IENs are of the format IEN:IEN-nnn.TXT (where nnn is the number of the IEN -- note the dash in the IEN filename). People without access to the DDN may call the NIC at (800) 235-3155 for hardcopies of RFCs, IENs or this guide.

Online copies of the guide are available through FTP in the file named NETINFO:TCP-IP-IMPLEMENTATIONS.TXT. For those who are not on the network, contact the DDN Network Information Center to request copies of RFCs, IENs or this guide by calling our toll-free number (800) 235-3155. Network users without FTP capability may send requests to NIC@SRI-NIC.ARPA.

The NIC welcomes your comments, additions and corrections. The last page of this document contains a Feedback form for your convenience in sending us your comments. Network users may send in the form via network mail to OLE@SRI-NIC.ARPA.

Key to Symbols:

v	Taken from vendor literature
[ ]	Not yet available
Last edit:	February 21, 1986

1. TCP/IP SOFTWARE IMPLEMENTATIONS BY MACHINE TYPE

1.1. Apple

1.1.1. Stanford Ethernet Appletalk Gateway

PRODUCT-OR-PACKAGE-NAME: Stanford Ethernet Appletalk Gateway (SEAGATE)

DESCRIPTION:

SEAGATE is a gateway that connects an Ethernet using the internet protocols, to an applebus (AppleTalk) using Apple or IP protocols. With such a gateway in place, it becomes possible to create server daemons to provide file, printing, mail, etc. services for Macintoshes.

This distribution of SEAGATE provides all the information and software you should need to setup your own gateway. Please bear in mind that this distribution is not 'supported' and that we can't give extensive help about the mechanics of putting your gateway together. We would like to hear about bug reports or enhancements however.

To assemble your own gateway, you will need at least the items below:

- The hardware is a 3 card multibus system: A 'SUN' (or Forward) 68000 CPU board, an Interlan NI3210 Ethernet card, and a homemade applebus card (about 8 chips) which takes an afternoon to wirewrap.
- A UNIX (usually VAX) running 4.2 BSD, 4.1 BSD or Eunice. This is because the source distributed is written in the PCC/MIT 68000 C compiler. [This is the same compiler included with the SUMACC Mac C cross development kit.] You can probably substitute any 68K C compiler and assembler, but it will be harder.
- Inside Mac, update service, and the Mac software supplement.
- Applebus Developer's Kit, includes: protocol manual, applebus taps and interconnecting cable, Mac applebus drivers on SONY disks.

Software usable through the gateway includes:

- MAT (Mac / ATP transfer program). A simple file transfer utility and daemon. Also serves as a skeleton application for general Mac transaction services. For example you could easily build a Mac program to read and create 'internet mail' containing pictures and speech.
- EFS (external file system). Allows UNIX to act as a general file server for the Macintosh. The Mac user sees the standard 'desktop' iconic model of his remote directory on UNIX. This software was written by John Seamons of LucasFilm and adapted by us for AppleTalk.
- TELNET and TFTP. These correspond to the UNIX programs used to access virtual terminal and file transfer services. The Mac programs here were developed by MIT (Romkey) / Dartmouth (Mark Sherman) and CMU (Tim Maroney). This software has been released by Tim to net.sources.mac (usenet) and is FTPable from CMU.

The released material for all of the above includes source code and documentation. These files are currently publicly accessable on-line via FTP to our SUMEX host, in the <info-mac> directory. There are also tar magtapes available of SUMACC and INFO-MAC (which contains the seagate files). Magtape info:

The tape duplication company below charges $65 to send each tape. This includes the new reel of tape and surface (book rate) postage. They will accept prepaid checks or money orders. Call the number below for additional info about postage for airmail or international mail.

Maria Code
Data Processing Services
Info-Mac TAR tape, and/or SUMACC TAR tape
1371 Sydney Drive
Sunnyvale, CA 94087
(408) 735-8006

DOCUMENTATION:

On [SUMEX]<info-mac> the files are:

seagate.ms	documentation in -ms format
seagate.hard	the wirelist for the applebus interface
seagate.shar1	the main gateway sources (including above docs)
seagate.shar2	the ddt, dlq, testscc, and tftp subdirectories
seagate-efs.shar	the file service (client and server)
seagate-mat.shar	the MAT service

All these files are plain ASCII and can be FTP'd from SUMEX with the 'anonymous' login. The shar (shell archive) files are large so we would appreciate it if you would avoid transfers during 9 AM to 5 PM PST.

CPU:

Apple Macintosh

O/S:

UNIX and others

IMPLEMENTATION-LANGUAGE:

C

CONTACT:

Bill Croft, (croft@sumex.arpa), SUMEX, Stanford University

PROPRIETY-STATUS:

Public domain (Copyrighted by Stanford; may be used, but not sold without permission)

INFORMATION-UPDATED:

January 1986

1.1.2. Apple Macintosh IP

PRODUCT-OR-PACKAGE-NAME: MacIP

DESCRIPTION:

MacIP is a set of libraries and programs for the Apple Macintosh. The programs allow use of Telnet and TFTP over AppleTalk. In conjunction with gateways and bridges, the programs allow the use of Telnet and TFTP with other IP hosts on other networks, e.g., a Vax/Unix on Ethernet. The libraries can be used by Macintosh programs written in Lisa Pascal to provide access to implementations of IP, TCP and UDP protocols on AppleTalk.

DOCUMENTATION:

Preliminary documentation is available as a technical report from the Mathematics and Computer Science Department, Dartmouth College, Hanover, NH 03755. A later (more complete and accurate) document may be forthcoming from the University Computation Center, Carnegie-Mellon University, Pittsburgh, PA 15213. (See contacts below). Some documentation accompanies the sources.

CPU:

Apple Macintosh (TFTP: 128K; Telnet: 512K)

O/S:

Apple Macintosh

IMPLEMENTATION-LANGUAGE:

Lisa Pascal and 68000 Assembler

DISTRIBUTOR:

1) Usenet (net.sources.mac)

2) Mark Sherman (see below)

3) Tim Maroney (see below)

CONTACT:

1) Tim Maroney, Tim.Maroney@CMU-CS-K.ARPA
University Computation Center
Carnegie-Mellon University
Pittsburgh, PA 15213

2) Mark Sherman, mss%Dartmouth@CSNET-RELAY.ARPA
Dept. of Mathematics and Computer Science
Dartmouth College
Hanover, NH 03755

ORDERING-PROCEDURE:

Under revision. Generally, Tim Maroney handles Usenet postings, Mark Sherman handles individual requests. Currently, send a request to Mark Sherman along with five blank single-sided microdisks (3.5 Sony compatible). We will return five disks with sources and programs (payment instead of disks is acceptable. Current estimate is $5/disk.)

PROPRIETY-STATUS:

None.

INFORMATION-UPDATED:

November 1985

1.2. Bolt Beranek and Newman

1.2.1. BBN-C/70

PRODUCT-OR-PACKAGE-NAME: BBN-C/70

DESCRIPTION:

The C/70 processor is a BBN-designed system with a native instruction set oriented toward executing the C language. It supports BBN O/S, a UNIX look-alike. A full, well-debugged, implementation of TCP/IP is provided as part of the kernel. Both user and server Telnet, SMTP, and FTP run as 20-bit user processes.

CPU:

C/70

O/S:

BBN O/S (a UNIX look-alike)

IMPLEMENTATION-LANGUAGE:

C

DISTRIBUTOR:

BBN Communications Corporation
50 Moulton Street
Cambridge, MA 02238

CONTACT:

Mitchell Tasman, (mtasman@BBN-UNIX.ARPA), (617) 497-2562

INFORMATION-UPDATED:

February 1986

1.2.2. BBN-Gateways

DESCRIPTION:

In an effort to provide improved service in the gateways maintained at BBN, a new gateway implementation written in MACRO-11 instead of BCPL has been developed. The MACRO-11 gateway provides users with internet service that is functionally equivalent to that provided by the current BCPL gateways with the following exceptions:

- Packets with options will be fragmented if necessary.
- ICMP protocol is supported.
- The gateway sends Time Exceeded, Parameter Problem, Echo, Information Request, Destination Unreachable, and Redirect ICMP messages.
- Initially, Source Quench and Timestamp packets will not be supported.
- Class A, B, and C Network Address formats as specified in the September 1981 Internet Protocol Specification (RFC791) are supported.

The gateway contains an internetwork debugger (XNET) that allows the gateway to be examined while it is running. Buffer space is greatly expanded to provide better throughput. ARPANET RFNMs are counted so the gateway will not send more than 8 outstanding messages to an ARPANET host.

IMPLEMENTATION-LANGUAGE:

MACRO-11

CONTACT:

Robert Hinden (hinden@BBNCCV.ARPA), (617) 497-3757

1.3. Burroughs

1.3.1. SDC

PRODUCT-OR-PACKAGE-NAME: Burroughs DDN Interface

DESCRIPTION:

The Burroughs DDN Interface augments the Burroughs Network Architecture to support communication with Burroughs and other vendor equipment employing DoD protocols. DoD network software is implemented partly in the mainframe and partly in an intelligent front end processor. DDN connection is via X.25 Standard Mode at speeds up to 56 Kbps. Telnet, FTP, and SMTP protocols are supported above TCP and IP. Several mainframes may be connected to DDN through the same front end via a proprietary LAN, in which case the front end supports the External Gateway Protocol. Multiple IMP connections may also be supported.

CPU:

B 5900, 6900, 7900, A-Series

O/S:

Burroughs MCP Release 3.6

IMPLEMENTATION LANGUAGE:

PASCAL

DISTRIBUTOR:

System Development Corporation
7925 Jones Branch Drive
McLean, VA 22102

CONTACT:

Joseph Gibson, (703) 821-0305

INFORMATION-UPDATED:

February 1986

1.4. Control Data Corporation

1.4.1. [CDC-Cyber]

DESCRIPTION:

This will be a package of software and technical support services for interfacing Cyber computing environments to the Defense Data Network. The expected date of completion is the end of 1985.

CPU:

Cyber 170

O/S:

NOS

DISTRIBUTOR:

Control Data Corporation

1.4.2. CYGNUS

PRODUCT-OR-PACKAGE-NAME: Cyber TCP/IP, CYGNUS, NIP

DESCRIPTION:

CYGNUS is a central processor program which implements TCP, UDP, and IP. NIP is a peripheral processor program which acts as the network device driver for CYGNUS. Communication with the rest of the Internet is accomplished using a Cyber channel adapter which connects the Cyber with a Vax 11/780 system. The Vax acts as a front-end processor for the Cyber: ARP is implemented there and standard Ethernet hardware is used to physically connect to the network. This implementation is in experimental testing and will not be available for general release until May 1986.

DOCUMENTATION:

No published documentation currently exists. Internal documentation is under preparation.

CPU:

Cyber 170/750 with Vax 11/780 as front-end

O/S:

UT2D (University of Texas Dual Dinosaur)

IMPLEMENTATION-LANGUAGE:

Cyber assembly language for CYGNUS and NIP (COMPASS)

C for the Vax-11 front-end program

DISTRIBUTOR:

Computation Center
The University of Texas at Austin

CONTACT:

Dan Reynolds, dan@NGP.UTEXAS.EDU
Com 23
Computation Center
The University of Texas at Austin
Austin, Texas 78712
(512) 471-3241 ext 223

ORDERING-PROCEDURE:

Contact the person above for specifics.

PROPRIETY-STATUS:

Copyright 1986, The University of Texas System Board of Regents

INFORMATION-UPDATED:

February 1986

1.5. Data General

1.5.1. [DG/VS]

DESCRIPTION:

The TCP/IP product currently supports Ethernet under the DG/VX operations system and will run under the AOS/VS operating system in the future. Support for the DDN implementation is forthcoming. Presently the product includes implementations of FTP and Telnet protocols. TCP/IP tracks the UNIX 4.2 BSD implementation.

DOCUMENTATION:

Contact Data General

CPU:

DS/4000 family, and MV product line

O/S:

DG/VX-today; AOS/VS-future

DISTRIBUTOR:

Data General
Data General Sales Force
4400 Computer Drive
Westboro, MA 01580

CONTACT:

Robert Ritter, Product Marketing Manager
Distributed Systems
(617) 366-8911

1.6. Datapoint

1.6.1. [Datapoint]

DESCRIPTION:

Bill Wimp is the manager of this task. The implementation has not yet been written (as of May 1983.)

DISTRIBUTOR:

Datapoint Corporation
9725 Datapoint Drive
MS - M95
San Antonio, TX 78284

CONTACT:

Bill Wimp, (512) 699-5242

1.7. Digital Equipment Corporation

1.7.1. BRL Gateway

PRODUCT-OR-PACKAGE-NAME: BRL Gateway

DESCRIPTION:

The BRL Gateway is a total redesign. None of the original MIT code was used. The gateway runs as a set of tasks on a simple multiprocessing operating system called LOS. Both LOS and the gateway code as described here were entirely designed and written by Ron Natalie.

This is an IP gateway with EGP support. The gateway will run on most PDP-11 series processors, but is designed to be portable to other machines that have C compilers. Point-to-point serial links, DEC PCL-11/B, and the ACC LH-DH/11 interfaces are currently supported. Work is in process to support the Interlan Ethernet interfaces with the Address Resolution Protocol, the Network Systems Corporations's HYPERchannel, and the Proteon Ringnet hardware.

All gateway functions and features of the IP and ICMP protocols are supported with the following exceptions. The ICMP timestamp packet is not implemented and ICMP source quench messages are ignored. IP timestamp and routing options are supported. The Exterior Gateway Protocol is supported as described in RFC904. Deviations from the specification are made to optimize the performance as a stub system from the existing core networks. The gateway also uses its own UDP based debug and monitoring protocol. GGP echo packets are also answered.

In addition, the gateway provides Virtual-Host service. TCP connections to be dynamically directed to an active host on the BRLNET. This allows the host "BRL" to appear to always be up for mail purposes.

The original BRL gateway was an early version of the MIT-C gateway modified to know about class B and C addresses and to work with the previously mentioned network interfaces. With the advent of EGP, higher network traffic, and greater routing intelligence, the modified MIT gateway became ineffective.

DOCUMENTATION:

Not yet

CPU:

Any PDP-11 processor that has memory management. The machines currently in use are a PDP-11/34 and LSI-11/23. A console terminal interface and a clock are required, as well as any network interfaces. The built-in line frequency clock on the LSI-11 processors may be used in lieu of an additional clock.

O/S:

LOS (the Little Operating System) is a small message-passing, multitasking operating system written for the implementation of the gateway, but is also being planned for use in real-time and file server applications. The Gateway code runs in the hardware user mode, while LOS itself runs in kernel mode. Interrupts are serviced in real-time by the user code.

IMPLEMENTATION-LANGUAGE:

With the exception of small parts of the operating system and some bit manipulation routines, which are written in assembler, both LOS and the Gateway code are written in the C language.

DISTRIBUTOR:

U.S. Army Ballistic Research Laboratory
ATTN: AMXBR-SECAD/R. Natalie
APG, MD 21005-5066

CONTACT:

Ron Natalie, (RON@BRL.ARPA), (301) 278-6678 or above address

ORDERING-PROCEDURE:

Send mail to RON@BRL.ARPA for more information

PROPRIETY-STATUS:

Both LOS and the Gateway are the property of the Department of the Army. They are available for public use at no charge. They may be distributed with commercial products with slight restrictions.

1.7.2. Fuzzball

PRODUCT-OR-PACKAGE-NAME: DCN/Fuzzball System for the PDP11

DESCRIPTION:

The Fuzzball internet software system has been developed with DARPA sponsorship over the last three years and used extensively for testing, evaluation and experimentation with other implementations. It currently runs in a sizable number of PDP11s and LSI-11s with varying configurations and applications. The system is designed to be used with the DCnet local network protocols as described in RFC-891 and the Fuzzball operating system for a multi-media internet workstation (also called a "Fuzzball"), which operates using emulation techniques to support the DEC RT-11 operating system and application programs. However, the system has also been used on other networks, including ARPANET, and with other operating systems, including RSX-11. An RSX-11 based version incorporating only IP/TCP modules is presently used to support the INTELPOST electronic-mail network.

The software system consists of a package of MACRO-11 and C modules structured into levels corresponding to local-net, IP, TCP and application levels, with user interfaces at each level. The local-net level supports several communication devices, including synchronous and asynchronous serial lines, 16-bit parallel links, Ethernet and 1822 interfaces. Hosts using these devices have been connected to ARPANET IMPs, Satellite IMPs, MACRO-11 Internet Gateways, SRI Port Expanders and to standard Ethernets, DECnets and X.25 public networks, as well as several DCnet local networks. When used on DCnet the system supports subnets as described in RFC-950, supports network-level alternate routing and local-level dynamic routing, as well as time-synchronization and error-reporting functions.

The IP level conforms to the RFC-791 specification, including fragmentation, reassembly, extended addressing and options, as well as the source-route option. A full set of ICMP features compatible with RFC-792 is available, including destination-unreachable, timestamp, redirect and source-quench messages. Destination-unreachable and source-quench information is conveyed to the user level via the TCP and raw-datagram protocol modules. Internet gateway (routing and non-routing) facilities conforming to the Exterior Gateway Protocol (EGP) RFC-904 specification can be included on an optional basis. This support can be configured to support hierarchically structured gateways and subnets.

The TCP level conforms to the RFC-793 specification, including PUSH, URGENT and options. Its structure is based on circular buffers for reassembly and retransmission, with repacketizing on each retransmission. Retransmission timeouts are dynamically determined using measured roundtrip delays, as adjusted for backoff. Data flow into the network is controlled by measured network bandwidth, and adjusted by source-quench information. Features are included to avoid excessive segment fragmentation and retransmission into zero windows. The user interface level provides error and URGENT notification, as well as a means to set outgoing IP/TCP options.

A raw-datagram interface is available for non-TCP protocols such as UDP (RFC-768). It includes internal congestion and fairness controls, multiple-connection management and timestamping. Protocols above UDP supported in the present system include Network Time Protocol (RFC-958), Time Server (RFC-868) and Name Server (IEN-116), Domain Name Server (RFC-883), and Trivial File-Transfer Protocol (RFC-783). Other raw-datagram services include XNET (IEN-158), Exterior Gateway Protocol (RFC-904), and several experimental services.

A number of user-level protocol modules above TCP have been built and tested with other internet hosts, including TELNET (RFC-854), File Transfer Protocol (RFC-959), Simple Mail Transfer Protocol (RFC-821), Multi-Media Mail Protocol and various other file-transfer, debugging and control/monitoring protocols.

Code sizes and speeds depend greatly on the system configuration and features selected. A typical 30K-word LSI-11/2 single-user configuration with all features selected and including the operating system, device drivers and all buffers and control blocks, leaves about 16K words for user-level application programs and protocol modules. A typical 124K-word LSI-11/23 or LSI-11/73 configuration provides the same service for up to 24 individually relocated users. Disk-to-disk FTP transfers across a DMA interprocessor link between LSI-11/23s operate in the range 30-50 Kbps with 576-octet packets. The 124K-word PDP11/34 INTELPOST

adaptation supports two 56-Kbps lines and a number of lower-speed lines. Typical throughputs range from 100 to 400 packets per second, depending on processor type and interface type.

DOCUMENTATION:

Summary description and help-information files

CPU:

PDP-11 and LSI-11 (all models)

O/S:

Self-contained

IMPLEMENTATION-LANGUAGE:

MACRO-11 and C

DISTRIBUTOR:

M/A-COM Linkabit Corporation

CONTACT:

David L. Mills
8619 Westwood Center Drive
Vienna, VA 22180
(Mills@ISID.ARPA), (703) 749-5208

ORDERING-PROCEDURE:

Contact the above

PROPRIETY-STATUS:

DARPA permission required to distribute sources and/or binaries. Use of DEC RT-11 system software requires licence; however, this software is not necessary for network protocols or application programs.

HOSTS:

DARPA Internet system: 8 (Linkabit), 10 (Ford Scientific Research Labs), 1 (Ford Aerospace), 4 University of Maryland), 1 (Purdue), 1 (Norwegian Telecommunications Administration), 4 (DFVLR - Germany), 1 (University College London), 1 (Royal Signals and Radar Establishment - UK); INTELPOST system: 13 worldwide

INFORMATION-UPDATED:

January 1986

1.7.3. Process Software RSX-11

DESCRIPTION:

This TCP/IP Implementation supports file transfer operations between DEC RSX-11M, RSX-11M-PLUS and IAS operating systems. Both user and server FTP are implemented. Full support is included for Ethernet (DEUNA and DEQNA) as well as proNET ring hardware interfaces. Process Software Corporation can modify the software for other interfaces.

DOCUMENTATION:

Fully documented; supplied with User's Manual

CPU:

PDP-11 and LSI-11

O/S:

RSX-11M, RSX-11M-PLUS, IAS

IMPLEMENTATION-LANGUAGE:

Macro-11

DISTRIBUTOR:

Process Software Corporation
P. O. Box 746
35 Montague Road
Amherst, MA 01004

CONTACT:

Phil Denzer
(413) 549-6994
Telex 517891

ORDERING-PROCEDURE:

Contact Process Software Corporation

1.7.4. Excelan RSX-11

PRODUCT-OR-PACKAGE-NAME: EXOS 8031/8032 TCP/IP for RSX-11 systems

DESCRIPTION:

Excelan's EXOS 8031 implements DOD standard ARPANET TCP/IP protocols to connect Q-bus-based DEC PDP-11 and LSI-11 minicomputers running RSX-11M to Ethernet networks. EXOS 8032 is the Unibus version. Both include an I/O driver, application programming interface, network administration utilities, and network application utilities: file transfer and virtual terminal connection.

DOCUMENTATION:

EXOS 8031/8032 TCP/IP Protocol Package for PDP/RSX Systems Reference Manual

CPU:

Q-bus or Unibus-based DEC PDP-11 or LSI-11 minicomputer running RSX-11M

O/S:

RSX-11M

IMPLEMENTATION-LANGUAGE:

C and MACRO-11

DISTRIBUTOR:

Inside Sales
Excelan, Inc.
2180 Fortune Drive
San Jose, CA 95131
(408) 434-2300

CONTACT:

Sales: Donna Keeling, (408) 434-2300

Technical: Andrea Salzman, (408) 434-2300

ORDERING-PROCEDURE:

Contact Inside Sales

INFORMATION-UPDATED:

February 1986

1.7.5. UNIX V6

DESCRIPTION:

In the UNIX kernel we have modules to drive a "Pronet" device (10 Mb/s token-passing ringnet), to transmit and receive internet packets, to demultiplex incoming TCP and UDP packets, to reassemble internet fragments, and to maintain a cache of internet hosts and their best first hop gateways. Kernel code and data use from 9k to 10.5k bytes depending on the size of the receive packets buffer.

Outside the kernel we have: TCP, user and server Telnet, SMTP, ICMP, and TFTP. All are running but are in varying stages of development.

DOCUMENTATION:

Some documentation about the user/kernel interface and about the kernel code

CPU:

PDP-11/45

O/S:

Version 6 UNIX

IMPLEMENTATION-LANGUAGE:

C

DISTRIBUTOR:

Laboratory for Computer Science
MIT
545 Technology Square
Cambridge, MA 02139

CONTACT:

Lisa Martin, (martin@MIT-CSR.ARPA)
Larry Allen, (lwa@MIT-CSR.ARPA)
(617) 253-6011

ORDERING-PROCEDURE:

We are willing to give this software to anyone who wants it, has a UNIX source license, and will agree to a few constraints. We should point out that it would be difficult for someone who is not a UNIX wizard to install this code. To find out more about the software send mail to martin@MIT-CSR.ARPA or to lwa@MIT-CSR.ARPA.

PROPRIETY-STATUS:

Copyright MIT Laboratory for Computer Science

1.7.6. Venix/11

PRODUCT-OR-PACKAGE-NAME: Venix/11 TCP/IP

DESCRIPTION:

This is based on the "UNIX V6" implementation available from the MIT Laboratory for Computer Science. It has been ported to a V7 UNIX system, in particular VenturCom's Venix/11 V2.0.

As little of the processing as possible takes place in the kernel, to minimize the code space required. It fits comfortably on I&D machines, but is almost hopeless on the smaller machines. The kernel includes a proNET device driver, IP fragment reassembly, IP header processing, local-net header processing, and simple routing. The rest of the IP processing, and all of the UDP and TCP functions, are in user libraries. The psuedo-teletype driver is also in the kernel, and is used by Server TELNET.

User programs handle ICMP processing; User and Server TELNET, SMTP, TFTP, Finger, and Discard. There are User programs for Nicname and Hostname. IEN-116 nameservers are used by all programs, and an IEN-116 nameserver is also provided. The TCP used is very simple, not very fast, and lies about windows. No FTP is available, nor is one currently planned.

DOCUMENTATION:

There is a full set of manual pages, and some internals documentation. The kernel code is well commented.

CPU:

PDP-11/44, 45, 70, 73, 84

O/S:

Venix/11 V2.0, should be simple to port to other V7 UNIX systems.

IMPLEMENTATION LANGUAGE:

C

DISTRIBUTOR:

Proteon, Inc.
4 Tech Circle
Natick, MA 01760

CONTACT:

John Shriver, jas@proteon.ARPA, (617) 655-3340

ORDERING-PROCEDURE:

Vendor product, available only in source form.

PROPRIETARY-STATUS:

Improvements are proprietary to Proteon.

INFORMATION-UPDATED:

January 1986

1.7.7. UNIX 2.9 BSD

DESCRIPTION:

2.9 BSD TCP/IP is an adaptation of Berkeley's original VAX TCP/IP (running under BSD 4.1 UNIX) which in turn is an offshoot of BBN's VAX TCP/IP. 2.9 BSD TCP/IP runs on PDP-11/44s and PDP-11/70s. The 2.8 version from SRI was adapted by Bill Croft (formerly at SRI), then Tektronix adapted it for 2.9. Berkeley took over modification of the software and brought it back to SRI where Dan Chernikoff and Greg Satz adapted it for a later release of 2.9. In addition to TCP/IP, UDP, ARP and the raw packet interface is available. ICMP redirects are not supported. User software implementations include Telnet and FTP, plus Berkeley-developed local net protocols, RWHO, RSH, RLOGIN, and RCP.

2.9 BSD with TCP/IP support could probably be made to run on smaller PDP-11s although the address space would be very tight and might present problems.

DOCUMENTATION:

Some documentation available; will be sent with tape request

CPU:

PDP-11/44, PDP-11/70

O/S:

2.9 UNIX

IMPLEMENTATION-LANGUAGE:

C (some system-dependent sections written in assembler)

CONTACT:

For technical information:
Carl Smith, (Carl@BERKELEY.ARPA)
(415) 644-1230

ORDERING-PROCEDURE:

For distribution, contact the PDP-11 Distribution office at:

Valerie Hanson
University of California
Berkeley, CA
(415) 642-6258

PROPRIETY-STATUS:

Governed by stipulations of Berkeley BSD license

1.7.8. Guelph UNIX 2.9 BSD

PRODUCT-OR-PACKAGE-NAME: GUELPH UNIX 2.9 BSD

DESCRIPTION:

This is a variation of the 2.9 BSD kernel that will run on the entire range of PDP11's from 11/23 up. It uses a modified kernel text segment scheme that does not require separate I/D for the TCP/IP code. Various fixes have been applied so that the kernel runs compatibly with UNIX 4.2 BSD on a 10Mbit/sec. ethernet. For more information see 2.9 BSD.

DOCUMENTATION:

Same as for 2.9 BSD

CPU:

PDP-11/23 to PDP-11/70 including Professional 350 PC's

O/S:

UNIX 2.9 BSD

IMPLEMENTATION LANGUAGE:

C plus some assembler

DISTRIBUTOR:

Rick Macklem,
Department of Computing and Information Science
University of Guelph
Guelph, Ontario Canada N1G 2W1

CONTACT:

Rick Macklem,
(519) 824-4120 x3284
rick%uogvax2.BITNET@wiscvm.ARPA

ORDERING PROCEDURE:

Send a tape and a 2.9 BSD source license to the above address

PROPRIETY STATUS:

2.9 BSD source licensees only (see 2.9 BSD)

INFORMATION-UPDATED:

October 1985

1.7.9. BBN UNIX

PRODUCT-OR-PACKAGE-NAME: BBN-VAX-UNIX

DESCRIPTION:

BBN has developed an implementation of TCP/IP for DEC's VAX(TM) family of processors, that runs under the Berkeley 4.1 BSD version of UNIX(TM). The development effort was funded by DARPA. Some important features of the BBN VAX TCP/IP are that it runs in the UNIX kernel for enhanced performance, it is a complete implementation of the TCP and IP protocols, and provides facilities for direct user access to the IP and underlying network protocols. The IP module supports checksums, option interpretation, fragmentation and reassembly, extended internet address support, gateway communication with ICMP, and support of multi-homing (multiple interfaces and addresses on the same or different networks). The TCP supports checksums, sequencing, the ability to pass options through to the IP level, and advanced windowing and adaptive retransmission algorithms. Support is also provided for the User Datagram Protocol (UDP).

In addition to the TCP/IP software for the VAX, BBN has developed implementations of the Telnet Virtual Terminal Protocol, File Transfer Protocol (FTP), and Simple Mail Transfer Protocol (SMTP), for use with TCP. These protocols are operated as user level programs. Also provided are network programming support tools, such as network name/address manipulation libraries, status, tracing, and debugging tools.

The TCP/IP and higher level protocol software are now available direct from BBN. The software is distributed on a 1600 bpi tar format tape, containing the sources and binaries for a 4.1 BSD UNIX kernel containing the network modifications and the sources and binaries for the higher level protocols and support software. Documentation is provided in the form of a set of UNIX manual pages for the network access device, user programs, and libraries. In addition, a detailed installation document is provided. Device drivers are supplied for the ACC LH-DH/11 IMP interface, the Proteon Associates PRONET Local Network Interface, the ACC IF-11 IMP interface, and the Interlan 10MB Ethernet interface.

CPU:

DEC VAX-11 series

O/S:

UNIX 4.1 BSD

IMPLEMENTATION-LANGUAGE:

C

DISTRIBUTOR:

BBN (see above)

CONTACT:

Patricia Buckley, (617) 497-3707

ORDERING-PROCEDURE:

The tape is available for a $300.00 duplication fee to Berkeley 4.1 BSD licensees. To order the tape, contact:

Bolt Beranek and Newman Inc.
10 Moulton St.
Cambridge, MA 02238
(617) 497-3827

You will then receive a copy of the licensing agreement. Tapes will be mailed upon receipt of a completed agreement and the distribution fee.

This tape is supplied as-is to UNIX 4.1 BSD licensees, with no warranties or support expressed or implied. BBN would be pleased to arrange separate agreements for providing installation assistance and/or software support services, if desired.

PROPRIETY-STATUS:

Requires a 4.1 BSD license from U.C. Berkeley

HOSTS:

BBN-VAX (development site)

1.7.10. UNIX 4.2 BSD

PRODUCT-OR-PACKAGE-NAME: UNIX 4.2 BSD

DESCRIPTION:

This implementation was developed by the Computer Research Group of the University of California at Berkeley as part of a number of research projects. It is based on the BBN implementation for the VAX. It provides support for TCP, IP, ICMP, and UDP with user and server programs for Telnet, FTP, TFTP and SMTP. Hardware supported includes ACC and DEC/CSS Imp Interfaces, 10M bit/s and 3M bit/s Ethernet, and Proteon PRONET.

DOCUMENTATION:

Online documentation of user programs, system call interfaces, etc.; "4.2 BSD Networking Implementation Notes", CSRG TR/6

CPU:

VAX-11/780, 11/750, 11/730

O/S:

UNIX 4.2 BSD

IMPLEMENTATION-LANGUAGE:

C

DISTRIBUTOR:

Computer Systems Research Group
Computer Science Division
University of California
Berkeley, CA 94720

CONTACT:

Pauline Schwartz, (Pauline@BERKELEY.ARPA)
Distribution Coordinator
(415) 642-7780

ORDERING-PROCEDURE:

Contact Distribution Coordinator

PROPRIETY-STATUS:

Requires a 4.2 BSD license agreement and Western Electric UNIX/32V, System III, or System V UNIX license.

NOTE: The licensing procedure for acquiring 4.3 BSD will consist of an Addendum to the present Berkeley License Agreement (4.2 BSD), plus Site Information and Equipment List Forms, and the required payment. If there has been any change with AT&T, we need to have that, too, e.g., name change, or updating of the AT&T UNIX Software Agreement.

INFORMATION-UPDATED:

January 1986

1.7.11. CSNET X.25 for UNIX 4.2 BSD

DESCRIPTION:

The IP/X.25 effort is supported at BBN by CSNET for distribution to CSNET sites. It is based on the TCP/IP implementation from Berkeley for 4.2 BSD. A device driver was added which allows IP datagrams to be sent over X.25 virtual circuits, and permits the host to serve as an X.29 PAD. An Interactive Systems INcard is required.

DOCUMENTATION:

Complete manual available if CSNET subscriber

CPU:

Any VAX-11 processor with a UNIBUS

O/S:

Berkeley UNIX 4.2 BSD

IMPLEMENTATION-LANGUAGE:

C

DISTRIBUTOR:

CSNET CIC
Bolt Beranek and Newman Inc.
10 Moulton Street
Cambridge, MA 02238
(CIC@CSNET-SH.ARPA)
(617) 497-2777

CONTACT:

Dennis Rockwell (DENNIS@SH.CS.NET)
Bolt Beranek and Newman Inc.
10 Moulton Street
Cambridge, MA 02238
(617) 497-2777

ORDERING-PROCEDURE:

Contact CIC (see above under DISTRIBUTOR)

PROPRIETY-STATUS:

For CSNET users only

INFORMATION-UPDATED:

February 1986

1.7.12. Wollongong System V

PRODUCT-OR-PACKAGE-NAME: WIN/SVX

DESCRIPTION:

This TCP/IP implementation includes Telnet (remote login), FTP (file transfer), SMTP (Mail) Netstat, Finger, TFTP. Supports the following network interfaces:

- Interlan Ethernet Controller
- DEC Deuna Ethernet Controller
- EXCELAN Ethernet Controller

DOCUMENTATION:

Installation Guide, Programmers Guide, QIO Guide, TCP/IP Primer and Users Manual provided.

CPU:

DEC VAX

O/S:

UNIX System V (5.2 and greater)

IMPLEMENTATION LANGUAGE:

C

DISTRIBUTOR:

The Wollongong Group
1129 San Antonio Road
Palo Alto, CA 94303

CONTACT:

Wollongong Sales
(415) 962-7200

ORDERING PROCEDURE:

Available with support from The Wollongong Group

PROPRIETY STATUS:

Wollongong

INFORMATION-UPDATED:

January 1986

1.7.13. UNIQ System V

PRODUCT-OR-PACKAGE-NAME: PASSAGE TCP/IP

DESCRIPTION:

PASSAGE TCP/IP is a complete implementation of TCP/IP that allows a UNIX System V (5.2) to participate as a routing or nonrouting (end) host over a wide spectrum of communication systems ranging from hard-wired connections to packet-switched or circuit-switched networks. It communicates with adjacent hosts over synchronous communication lines, Ethernet, LANs, and standard 1822 interface to an IMP. Features include TCP/IP, ICMP, Telnet, FTP, UDP, and SMTP. Plans are to implement X.25 in the near future.

DOCUMENTATION:

Included in package

CPU:

DEC VAX-11, DEC PDP-11 (Ethernet only)

O/S:

UNIX System V (5.2)

IMPLEMENTATION-LANGUAGE:

C

DISTRIBUTOR:

UNIQ Digital Technologies
28 S. Water St.
Batavia, Ill 60510
(312) 879-1008

CONTACT:

Sales department (see above)

ORDERING-PROCEDURE:

Contact distributor

PROPRIETY-STATUS:

PASSAGE is a product of UNIQ Digital Technologies

INFORMATION-UPDATED:

January 1986

1.7.14. Excelan System V

PRODUCT-OR-PACKAGE-NAME: EXOS 8015 TCP/IP for UNIX System V-based DEC VAX minicomputers

DESCRIPTION:

Excelan's EXOS 8015 implements DOD standard ARPANET TCP/IP protocols to connect UNIX System V-based DEC VAX minicomputers to Ethernet networks. Includes an I/O driver, application programming interface, network administration utilities, and network application utilities: file transfer, virtual terminal connection, and remote command execution.

DOCUMENTATION:.

EXOS 8010 TCP/IP Protocol Package for UNIX Systems Reference Manual

CPU:

DEC VAX-11 family

O/S:

UNIX System V

IMPLEMENTATION-LANGUAGE:

C

DISTRIBUTOR:

Inside Sales
Excelan, Inc.
2180 Fortune Drive
San Jose, CA 95131
(408) 434-2300

CONTACT:

Sales: Donna Keeling, (408) 434-2300

Technical: Andrea Salzman, (408) 434-2300

ORDERING-PROCEDURE:

Contact Inside Sales

INFORMATION-UPDATED:

February 1986

1.7.15. Internet VMS

PRODUCT-OR-PACKAGE-NAME: HYPER-Link

DESCRIPTION:

Hyper-Link is a series of communications software and hardware products which meet the Defense Communications Agency MIL-STDs for the Defense Data Network, for use on any of the DDN networks, such as ARPANET, MILNET, etc. These products also conform to the conventions of the UNIX 4.2 BSD implementation of these protocols for use with the many popular UNIX based graphic workstations, such as SUN, APOLLO, CIMLINK, CADNETIX, and others.

Hyper-Link supplies TCP/IP communication protocol software products, an Application Programming Interface to TCP functions for PASCAL, C and Assembly, and the MIL-STD applications File Transfer (FTP), Virtual Terminal (TELNET), and Simple Mail Transfer (SMTP).

Hyper-Link for VAX and MicroVAX VMS systems support Ethernet and DDN X.25 communications links. Ethernet attachment is through DEUNA or DEQNA controller boards. DDN X.25 attachment is through a "standard" certified ACC board (ACC 6250 or 5250). DDN LHDH attachment is also supported through the ACC LHDH controller. The X.25 connection can also be made certifiable to certain commercial X.25 networks such as GTE TELENET, TYMNET and others.

Hyper-Link software can concurrently operate with DECNET in a single VAX or MicroVAX system sharing a single DEUNA or DEQNA board Ethernet connection. This enables a low cost bridge function to operate between the two Ethernet networks.

Similarly, Hyper-Link supports both an X.25 and Ethernet connection in the same system, enabling operation of a LAN to Wide Area Network bridge function.

DOCUMENTATION:

A full set of documentation is available.

CPU:

DEC VAX-11, MicroVAX

O/S:

VMS 4.X

IMPLEMENTATION-LANGUAGE:

C and PASCAL

DISTRIBUTOR:

Internet Systems Corporation
8360 W. Oakland Park Blvd.
Sunrise, Florida 33321

CONTACT:

Mary Bloch, (305) 742-0301

ORDERING-PROCEDURE:

Submit purchase order to above address.

See above contact for pricing.

PROPRIETARY-STATUS:

Product of Internet Systems Corporation

INFORMATION-UPDATED:

February 1986

1.7.16. Tektronix VMS

PRODUCT-OR-PACKAGE-NAME: VAX/VMS

DESCRIPTION:

This implementation runs under VAX 780/VMS. It has a hyperchannel interface with a homegrown VMS driver. TCP/IP from 3COM interoperates with VMS TCP/IP over HYPERchannel. They have added TCP and IP options to UNET. Currently, there is no plan to market TCP/IP software, although it is available to the network research community for internal use only. Support has been added for Ethernet using an Interlan driver.

- TCP: Has no security or precedence.
- IP: No datagram reassembly or fragmentation. Neither Internet control protocol nor gateway protocol have been implemented. There are no plans to implement fragmentation.
- FTP: Not compatible with UNIX 4.2 BSD but compatible with 3COM's implementation of FTP. There are plans, however, to make it compatible with UNIX 4.2 BSD.

DOCUMENTATION:

Source is well-commented

CPU:

VAX/780,750 and any DEC machine running VMS (including micros)

O/S:

UNIX for UNET, VMS for homegrown TCP/IP

IMPLEMENTATION-LANGUAGE:

BLISS (an equivalent of C) and some MACRO

DISTRIBUTOR:

Tektronix Inc.
PO Box 500
Stop 50/454
Beaverton, OR 97077

CONTACT:

Jeff Mulick (jeffm%tektronix@CSNET-RELAY.ARPA)
(503) 627-5007

ORDERING-PROCEDURE:

Contact Jeff Mulick

PROPRIETY-STATUS:

Not available for OEM resale

1.7.17. Wollongong MicroVMS

PRODUCT-OR-PACKAGE-NAME: WIN/MicroVX

DESCRIPTION:

This TCP/IP implementation includes Telnet (remote login), FTP (file transfer), SMTP (Mail) Netstat, Finger, TFTP. Supports the following network interface: DEC DEUNA Ethernet Controller.

DOCUMENTATION:

Installation Guide, Programmers Guide, QIO Guide, TCP/IP Primer and Users Manual provided.

CPU:

DEC MicroVAX I and II

O/S:

Micro VMS 4.0 or greater

IMPLEMENTATION LANGUAGE:

C

DISTRIBUTOR:

The Wollongong Group
1129 San Antonio Road
Palo Alto, CA 94303

CONTACT:

Wollongong Sales
(415) 962-7200

ORDERING PROCEDURE:

Available with support from The Wollongong Group

PROPRIETY STATUS:

Wollongong

INFORMATION-UPDATED:

January 1986

1.7.18. Wollongong VMS

PRODUCT-OR-PACKAGE-NAME: WIN/VX

DESCRIPTION:

This TCP/IP implementation includes Telnet (remote login), FTP (file transfer), SMTP (Mail) Netstat, Finger, TFTP. Supports the following network interfaces:

- ACC LH-DH (1822 interface)
- ACC HDH (1822-J) (For WIN/VX (DDN))
- ACC X.25 (For WIN/VX (DDN))
- Interlan Ethernet Controller
- DEC Deuna Ethernet Controller
- DEC DMR-11

DOCUMENTATION:

Installation Guide, Programmers Guide, QIO Guide, TCP/IP Primer and Users Manual provided.

CPU:

DEC VAX

O/S:

VMS 3.1 or greater and VMS 4.x

IMPLEMENTATION LANGUAGE:

C

DISTRIBUTOR:

The Wollongong Group
1129 San Antonio Road
Palo Alto, CA 94303

CONTACT:

Wollongong Sales
(415) 962-7200

ORDERING PROCEDURE:

Available with support from The Wollongong Group

PROPRIETY STATUS:

Wollongong

INFORMATION-UPDATED:

January 1986

1.7.19. Softsel VMS

PRODUCT-OR-PACKAGE-NAME: SOFTSEL-VMS

DESCRIPTION:

Software implementation of File Transfer Protocol (FTP), Network Virtual Terminal Protocol (TELNET) and Simple Mail Transfer Protocol (SMTP). Runs on top of TCP/IP or NETEX (using a separate TCP Emulator).

DOCUMENTATION:

On-line VAX/VMS HELP and installation instructions are provided.

CPU:

VAX family

O/S:

VMS (Versions 4.0 and higher)

IMPLEMENTATION-LANGUAGE:

C

DISTRIBUTOR:

Softsel Incorporated
601 Ewing Street
Princeton, NJ 08540
(601) 683-1150

ORDERING-PROCEDURE:

Contact SCP Product Manager at Softsel Incorporated

PROPRIETY-STATUS:

Proprietary product of Softsel Incorporated

(NETEX is a trademark of Network Systems Corporation)

INFORMATION-UPDATED:

December 1985

1.7.20. Excelan MicroVMS

PRODUCT-OR-PACKAGE-NAME: EXOS 8044 TCP/IP for DEC MicroVAX II supermicros

DESCRIPTION:

Excelan's EXOS 8044 implements DoD standard ARPANET TCP/IP protocols to connect MicroVMS-based DEC MicroVAX II supermicros to Ethernet networks. Includes an I/O driver, application programming interface, network administration utilities, and network application utilities: file transfer and virtual terminal connection.

DOCUMENTATION:

EXOS 8044 TCP/IP Protocol Package for MicroVAX II Systems Reference Manual

CPU:

DEC MicroVAX II supermicro

O/S:

MicroVMS

IMPLEMENTATION-LANGUAGE:

C and VAX-11 MACRO

DISTRIBUTOR:

Inside Sales
Excelan, Inc.
2180 Fortune Drive
San Jose, CA 95131
(408) 434-2300

CONTACT:

Sales: Donna Keeling, (408) 434-2300

Technical: Andrea Salzman, (408) 434-2300

ORDERING-PROCEDURE:

Contact Inside Sales

INFORMATION-UPDATED:

February 1986

1.7.21. Excelan VMS

PRODUCT-OR-PACKAGE-NAME: EXOS 8043 TCP/IP for VMS-based DEC VAX-11 family

DESCRIPTION:

Excelan's EXOS 8043 implements DoD standard ARPANET TCP/IP protocols to connect VMS-based DEC VAX minicomputers to Ethernet networks. Includes an I/O driver, application programming interface, network administration utilities, and network application utilities: file transfer and virtual terminal connection.

DOCUMENTATION:

EXOS 8043 TCP/IP Protocol Package for VAX/VMS Systems Reference Manual

CPU:

DEC VAX-11 family

O/S:

VMS

IMPLEMENTATION-LANGUAGE:

C and VAX-11 MACRO

DISTRIBUTOR:

Inside Sales
Excelan, Inc.
2180 Fortune Drive
San Jose, CA 95131
(408) 434-2300

CONTACT:

Sales: Donna Keeling, (408) 434-2300

Technical: Andrea Salzman, (408) 434-2300

ORDERING-PROCEDURE:

Contact Inside Sales

INFORMATION-UPDATED:

February 1986

1.7.22. Softsel Gateway

PRODUCT-OR-PACKAGE-NAME: SOFTSEL-GATEWAY

DESCRIPTION:

Software implementation of translating gateway that allows the connection of NETEX based networks (such as HYPERchannel, HYPERbus and DATApipe) to TCP/IP based networks. Runs in an enviroment with both TCP/IP and NETEX.

DOCUMENTATION:

On-line VAX/VMS HELP and installation instructions are provided for the VMS implementation and UNIX man pages for the UNIX implementation.

CPU:

VAX family

O/S:

VMS (Versions 4.0 and higher) UNIX 4.2 BSD

IMPLEMENTATION-LANGUAGE:

C

DISTRIBUTOR:

Softsel Incorporated
601 Ewing Street
Princeton, NJ 08540
(601) 683-1150

ORDERING-PROCEDURE:

Contact SCP Product Manager at Softsel Incorporated

PROPRIETY-STATUS:

Proprietary product of Softsel Incorporated

(NETEX, HYPERchannel, HYPERbus and DATApipe are trademarks of Network Systems Corporation)

INFORMATION-UPDATED:

December 1985

1.7.23. TENEX/FOONEX/AUGUST

DESCRIPTION:

SRI has implemented TCP/IP for the TENEX (FOONEX and AUGUST) operating system running on DEC-10 KA or KI and F2, F3 or F4 Foonly processors. It was adapted from the BBN and ISI versions of TENEX TCP/IP, with contributions from Ed Taft of Xerox and Phil French of Tymshare, and resides in the operating system. It is largely upward-compatible with TOPS-20 implementations and fully compatible with AUGMENT. Telnet, FTP, SMTP, ICMP, ECHO, TIME, WHOIS, and NAME service are available although some are still under development.

This is an implementation done at BBN. DARPA has dropped funding for continued support for Tenex development, and thus the latest versions done for BBN and DEC for TOPS-20 are not available for Tenex.

DOCUMENTATION:

None available at this time other than that embedded in the programs

CPU:

DEC-10 (KA, KI), Foonly (F2,F3,F4)

O/S:

TENEX-134,135/FOONEX/AUGUST

IMPLEMENTATION-LANGUAGE:

MACRO

DISTRIBUTOR:

SRI International
DDN Network Information Center
Room EJ274
333 Ravenswood Ave.
Menlo Park, CA 94025

CONTACT:

Vivian Neou, (VIVIAN@SRI-NIC.ARPA), (415) 859-4781

ORDERING-PROCEDURE:

Contact Vivian Neou

PROPRIETY-STATUS:

DCA-owned software

INFORMATION-UPDATED:

January 1986

1.7.24. LLL TOPS-10

DESCRIPTION:

A TOPS-10 implementation was begun by Don Provan while at WPAFB-AFWAL and was completed by him at LLL-MFE. There have been no serious problems since April of 1983. System supports IP, ICMP and TCP. User level software available for FTP and Telnet connections.

DOCUMENTATION:

Scarce: existing code (both system code and user level code) is the only reliable source of information; user level code maintained by nedved@CMU-CS-A.ARPA

CPU:

PDP-10 or PDP-10 look alikes

O/S:

TOPS-10 (also runs under WAITS at SU-AI)

IMPLEMENTATION-LANGUAGE:

MACRO-10

DISTRIBUTOR:

Don Provan
Lawrence Livermore Laboratory
MFE Computer Center
P.O. Box 5509
Livermore, CA 94550

CONTACT:

Don Provan, (provan@LLL-MFE.ARPA), (415) 422-4474

ORDERING-PROCEDURE:

All files are in [70,71,monitor]@LLL-MFE, available via FTP. Also available on 9-track tape

HOSTS:

LLL-MFE running TOPS-10 7.01a on a KL-10, WPAFB-AFWAL running TOPS-10 7.01 on a KL-10, CMU-CS-A running TOPS-10 6.02a on a KL-10, SU-AI running WAITS on a PDP-10 look-alike, WHARTON running TOPS-10 7.01a on a KL-10

1.7.25. MIT ITS

DESCRIPTION:

This is a TCP/IP implementation that runs under the MIT Incompatible Timesharing System (ITS) on DEC-10/20 machines (KA or KL), written by Ken Harrenstien of SRI International under contract to MIT. Includes Telnet, FTP and SMTP. Bug reports and interest group is BUG-TCP@MIT-MC.ARPA.

DOCUMENTATION:

Available from contact

CPU:

DEC-10/20 (KA and KL)

O/S:

ITS

IMPLEMENTATION-LANGUAGE:

MIDAS(PDP-10)

DISTRIBUTOR:

MIT, Cambridge, MA

CONTACT:

Ken Harrenstien, (KLH@SRI-NIC.ARPA)
SRI International
Room EJ280
333 Ravenswood Avenue
Menlo Park, CA 94025
(415) 859-3695

ORDERING-PROCEDURE:

Appropriate files can be FTP'd across the network. Contact KLH@SRI-NIC.ARPA for more information.

PROPRIETY-STATUS:

MIT-proprietary software

HOSTS:

MIT-MC

1.7.26. BBN TOPS-20

PRODUCT-OR-PACKAGE-NAME: BBN-TOPS-20

DESCRIPTION:

The TOPS20 Internetworking software supports multiple networks, multiple interfaces on a single network, and multiple protocol suites. Included in the standard distribution are an interface to 1822 nets via an AN20, an interface to a network front-end via a DTE20, and the DARPA protocol suite (DEC is developing an Ethernet interface).

The DARPA IP, ICMP, TCP, Server TELNET protocols are included within the TOPS20 monitor; other protocols are implemented as user application processes. The IP module supports a routing cache maintained via ICMP redirect NET and HOST messages. It performs fragmentation and reassembly, implements all options and can forward traffic between any of the host's interfaces. Applications may interface to the IP layer using User Queues.

All ICMP messages are supported; error messages may be sent by any of the protocol layers; higher layers are notified when a message is received concerning one of their packets. Messages can be sent by applications using the User Queue facility.

Applications can interface to TCP either as a read/write file or via multiple buffers. The TCP layer supports IP routing options, ICMP destination unreachable, source quench, and redirects which specify a type-of-service, and the segment size option. Support for preemption, precedence, and security options is delegated to the application. Telnet supports options and subnegotiations.

There is extensive inter-layer flow control, error reporting, and monitoring. Utilities are available to provide information, list monitoring data, and perform diagnostics.

DEC has distributed a prior version of this implementation as part of its standard TOPS20-AN monitor; the current version is currently being transferred to DEC.

DOCUMENTATION:

User's Manual including Site Configuration Guide

CPU:

DEC KL10

O/S:

TOPS20-AN, Release 5 or 6

IMPLEMENTATION-LANGUAGE:

Macro

DISTRIBUTOR:

Bolt Beranek and Newman Inc.
10 Moulton Street
Cambridge, Mass. 02238

CONTACT:

Charles Lynn, (CLynn@BBNA), (617) 497-3367

ORDERING-PROCEDURE:

The latest software release should soon be available as part of the standard DEC TOPS20-AN monitor. Until the transfer process has been completed, the software is available via FTP over the internet, or by sending a magtape to:

Bolt Beranek and Newman Inc.
10 Moulton Street
Cambridge, Mass. 02238
Attn: Charles Lynn

A return mailing label should be included. Also required is a TOPS-20 Source License and the TOPS-20 monitor sources, as the implementation includes source-level changes to the standard DEC monitor.

PROPRIETY-STATUS:

Public domain

HOSTS:

TOPS-20s at BBN, ISI, CMU; DEC Customers are running a previous version

INFORMATION-UPDATED:

January 1986

1.7.27. DEC TOPS-20

PRODUCT-OR-PACKAGE-NAME: TOPS-20AN

DESCRIPTION:

Based on the DARPA sponsored TCP/IP implementation for TOPS-20 with major modifications. The BBN TCP/IP software was merged into the standard supported TOPS-20, and a different JSYS interface was implemented that utilized the existing TOPS-20 I/O JSYSs by adding a logical device for TCP. Supports: the 1822 interface, DEC NI20 Ethernet interface and the DEC CI20 computer interconnect.

DOCUMENTATION:

Hardware manuals, print sets, diagnostics write-up and descriptions in the TOPS-20 software notebooks.

CPU:

DEC KL10E or KL10R

O/S:

TOPS-20, Release 6.1

IMPLEMENTATION-LANGUAGE:

PDP10/TOPS-20 assembler

DISTRIBUTOR:

Digital Equipment Corporation
200 Forest St.
Marlboro, MA 01752

CONTACT:

Bill Melohn (Melohn@DEC-MARLBORO.ARPA)
MR01-2/L10
(617) 467-2224

ORDERING-PROCEDURE:

See your local DEC salesman

PROPRIETY-STATUS:

Licensed by DEC

INFORMATION-UPDATED:

January 1986

1.7.28. Panda TOPS-20 EGP

PRODUCT-OR-PACKAGE-NAME: EGP-20

DESCRIPTION:

EGP-20 is a subset implementation of the Exterior Gateway Protocol (EGP) which allows a DECSYSTEM-20 to be used as an IP gateway. TOPS-20 provides a "dumb gateway" facility; however, all new gateways are required to negotiate EGP to announce their availability to their neighbor gateways.

DOCUMENTATION:

Online included with package

CPU:

DECSYSTEM-20

O/S:

TOPS-20 version 5.3 or later

IMPLEMENTATION-LANGUAGE:

MACRO-20 (DECSYSTEM-20 assembly language)

DISTRIBUTOR:

PANDA PROGRAMMING
1802 Hackett Ave., Rainbow Suite
Mountain View, CA 94043-4431

CONTACT:

Mark Crispin, MRC%PANDA@SUMEX-AIM, (415) 968-1052

ORDERING-PROCEDURE:

Call for pricing and ordering information

PROPRIETY-STATUS:

Panda Programming propriety

INFORMATION-UPDATED:

January 1986

1.7.29. Panda TOPS-20 Mail

PRODUCT-OR-PACKAGE-NAME: MM-20

DESCRIPTION:

MM-20 is an electronic mailsystem for the DECSYSTEM-20 family. MM-20 incorporates mail reading, mail queueing, mailbox/mailing lists, SMTP (DoD Internet mail transport protocol), "sends", and external queue management tools. MM-20 supports the following protocols: DoD Internet TCP/IP/SMTP, DECnet using SMTP, Chaos, and Pup. A facility also exists for adding additional delivery routines (e.g. mailing over asynchronous TTY lines).

DOCUMENTATION:

Online included with package

CPU:

DECSYSTEM-20

O/S:

TOPS-20 version 4 or later (version 5.3 or later is required for TCP/IP support).

IMPLEMENTATION-LANGUAGE:

MACRO-20 (DECSYSTEM-20 assembly language)

DISTRIBUTOR:

PANDA PROGRAMMING
1802 Hackett Ave., Rainbow Suite
Mountain View, CA 94043-4431

CONTACT:

Mark Crispin, MRC%PANDA@SUMEX-AIM, (415) 968-1052

ORDERING-PROCEDURE:

MM-20 is available for a nominal charge to cover media and shipping costs. Call for current information.

PROPRIETY-STATUS:

Public Domain

INFORMATION-UPDATED:

January 1986

1.7.30. Panda TOPS-20 NETSRV

PRODUCT-OR-PACKAGE-NAME: NETSRV

DESCRIPTION:

NETSRV is a multi-process listener and server for a number of the major Internet service protocols. It replaces such programs as FTSCTT and SMTPSV. NETSRV is based on a similar program for the old NCP protocols.

DOCUMENTATION:

Online included with package

CPU:

DECSYSTEM-20

O/S:

TOPS-20 version 5.3 or later

IMPLEMENTATION-LANGUAGE:

MACRO-20 (DECSYSTEM-20 assembly language)

DISTRIBUTOR:

PANDA PROGRAMMING
1802 Hackett Ave., Rainbow Suite
Mountain View, CA 94043-4431

CONTACT:

Mark Crispin, MRC%PANDA@SUMEX-AIM, (415) 968-1052

ORDERING-PROCEDURE:

Bundled as part of the PANDA MODIFICATIONS TO TOPS-20. Call for separate ordering information.

PROPRIETY-STATUS:

Panda Programming propriety

INFORMATION-UPDATED:

January 1986

1.7.31. Panda Modifications to TOPS-20

PRODUCT-OR-PACKAGE-NAME: PANDA MODIFICATIONS TO TOPS-20

DESCRIPTION:

The PANDA MODIFICATIONS TO TOPS-20 consists of a set of extensions and bug fixes to TOPS-20. These include many of the public domain extensions to TOPS-20 published on the "ARPANET TOPS-20 list" as well as many extensions unique to the PANDA MODIFICATIONS including facilities to operate TOPS-20 in networking configurations not supported by DEC.

The PANDA MODIFICATIONS TO TOPS-20 are distributed as a set of REDIT-format change files and therefore are only available to sites with a valid DEC TOPS-20source license.

DOCUMENTATION:

Online included with package

CPU:

DECSYSTEM-20

O/S:

TOPS-20 version 5.4. TOPS-20 version 6.1 modifications will be available soon.

IMPLEMENTATION-LANGUAGE:

MACRO-20 (DECSYSTEM-20 assembly language)

DISTRIBUTOR:

PANDA PROGRAMMING
1802 Hackett Ave., Rainbow Suite
Mountain View, CA 94043-4431

CONTACT:

Mark Crispin, MRC%PANDA@SUMEX-AIM, (415) 968-1052

ORDERING-PROCEDURE:

Call for pricing and ordering information

PROPRIETY-STATUS:

Panda Programming propriety

INFORMATION-UPDATED:

January 1986

1.7.32. Panda TOPS-20 Telnet

PRODUCT-OR-PACKAGE-NAME: TELNET-20

DESCRIPTION:

TELNET-20 implements the user half of the Internet TELNET protocol. It also supports Chaos, Pup, and DECnet protocols.

DOCUMENTATION:

Online included with package

CPU:

DECSYSTEM-20

O/S:

TOPS-20 version 5.3 or later

IMPLEMENTATION-LANGUAGE:

MACRO-20 (DECSYSTEM-20 assembly language)

DISTRIBUTOR:

PANDA PROGRAMMING
1802 Hackett Ave., Rainbow Suite
Mountain View, CA 94043-4431

CONTACT:

Mark Crispin, MRC%PANDA@SUMEX-AIM, (415) 968-1052

ORDERING-PROCEDURE:

Bundled as part of the PANDA MODIFICATIONS TO TOPS-20. An earlier version is distributed by DEC.

PROPRIETY-STATUS:

Panda Programming propriety

INFORMATION-UPDATED:

January 1986

1.8. ELXSI

PRODUCT-OR-PACKAGE-NAME: ELXSI Fusion TCP/IP

DESCRIPTION:

Implementation of FTP and Telnet for ELXSI machines running release 10 or later. Also included are packet-monitoring and statistics utilities. Later releases will include networking libraries.

DOCUMENTATION:

Manuals and on-line documentation

CPU:

ELXSI 6400

O/S:

Embos, Enix System V, Enix 4.2

IMPLEMENTATION LANGUAGE:

C and Pascal

DISTRIBUTOR:

ELXSI Inc.
2334 Lundy Place
San Jose, CA 95131

CONTACT:

Bob Hedges, ELXSI
(408) 942-0900

ORDERING PROCEDURE:

Through sales representatives

PROPRIETY STATUS:

Source and object code for sale

INFORMATION-UPDATED:

August 1985

1.9. Fortune

1.9.1. [Fortune 32:16]

PRODUCT-OR-PACKAGE-NAME: FORTUNE 32:16

DESCRIPTION:

UNET was ported from 3COM in to the Fortune 32:16 system for evaluation purposes.

CPU:

Fortune 32:16

O/S:

FOR:PRO (TM)

IMPLEMENTATION-LANGUAGE:

C

DISTRIBUTOR:

Fortune Systems Corp.
300 Harbor Blvd.
Belmont, CA 94002

CONTACT:

Richard Tung, (415) 595-8444

PROPRIETY-STATUS:

Not available as a commercial product at this time

1.10. Gould

1.10.1. Gould MPX-32

PRODUCT-OR-PACKAGE-NAME: MPX-32 TCP/IP

DESCRIPTION:

An implementation of the Department of Defense Protocols for Gould CONCEPT/32 machines running the MPX-32 (Release 3.2B or later) Operating System. This includes IP and TCP. UDP, TFTP, FTP, Telnet and SMTP will be implemented during 1986.

DOCUMENTATION:

Operation and installation procedures are covered by standard Gould, CSD documentation.

CPU:

All CONCEPT/32 machines

O/S:

MPX-32 (Release 3.2B or later)

DISTRIBUTOR:

Gould Inc. Computer Systems Division
6901 West Sunrise Boulevard
Ft. Lauderdale, Florida 33313-4499

CONTACT:

Don Zwonitser, Product Line Manager, Communications, (305) 587-2900

INFORMATION-UPDATED:

January 1986

1.11. Honeywell

1.11.1. [DPS6]

PRODUCT-OR-PACKAGE-NAME: DPS6-DDN

DESCRIPTION:

This will be a package of software and technical support services for interfacing Honeywell computing environments to the Defense Data Network.

This implementation includes an X.25 interface. Features are FTP, SMTP and Telnet support for asynchronous terminals and Honeywell synchronous terminals. It also includes a programmatic interface for applications running under Mod 400. Available June 1986.

DOCUMENTATION:

Complete documentation

CPU:

Honeywell DPS6

O/S:

GCOS 6 Mod 400

IMPLEMENTATION-LANGUAGE:

C

DISTRIBUTOR:

Honeywell Information Systems
Federal Systems Divisions
7900 West Park Drive
McLean, VA 22102

CONTACT:

Jim Reda, (703) 448-2099

ORDERING-PROCEDURE:

Contact Jim Reda

PROPRIETY-STATUS:

Honeywell Information Systems

INFORMATION-UPDATED:

January 1986

1.11.2. [DPS8]

PRODUCT-OR-PACKAGE-NAME: DPS8-DDN

DESCRIPTION:

This will be a package of software and technical support services for interfacing Honeywell computing environments to the Defense Data Network.

This TCP/IP implementation includes an X.25 interface. Features are FTP, SMTP and Telnet support for asynchronous terminals and Honeywell synchronous terminals. It also includes a programmatic interface for applications running under GCOS 8. Available June 1986.

DOCUMENTATION:

Complete documentation

CPU:

Honeywell DPS8

O/S:

GCOS 8

IMPLEMENTATION-LANGUAGE:

C

DISTRIBUTOR:

Honeywell Information Systems
Federal Systems Divisions
7900 West Park Drive
McLean, VA 22102

CONTACT:

Jim Reda, (703) 448-2099

ORDERING-PROCEDURE:

Contact Jim Reda

PROPRIETY-STATUS:

Honeywell Information Systems

INFORMATION-UPDATED:

January 1986

1.11.3. MULTICS

PRODUCT-OR-PACKAGE-NAME: MULTICS TCP/IP Facility

DESCRIPTION:

The Multics implementation includes TCP/IP as well as Telnet, FTP, and SMTP. Support is also available for Finger, Discard, Echo, Time, and ICMP.

DOCUMENTATION:

Online help file supplied

CPU:

Honeywell Level 68, DPS8M

O/S:

Multics MR 10.0 and beyond

IMPLEMENTATION-LANGUAGE:

PL/1

DISTRIBUTOR:

Honeywell Information Systems
Federal Systems Division
7900 Westpark Drive
McLean, VA 22102

CONTACT:

Jim Reda, (703) 448-2099
Honeywell Information Systems
MST 60
P.O. Box 8000
Phoenix, AZ 85066
(602) 249-6629

ORDERING-PROCEDURE:

Contact Jim Reda

PROPRIETY-STATUS:

Honeywell product

HOSTS:

CISL-SERVICE-MULTICS, HI-MULTICS, MIT-MULTICS, RADC-MULTICS, USGS1-MULTICS, USGS2-MULTICS

INFORMATION-UPDATED:

November 1985

1.12. IBM

1.12.1. MIT IBM-PC

PRODUCT-OR-PACKAGE-NAME: PC/IP

DESCRIPTION:

A set of PC/DOS commands that allow the IBM/PC to be a client of several TCP/IP-based network services, and to be used for network monitoring and maintenance. The TCP, UDP, and IP layers are designed with specific tailoring to the requirements of their known customers, user Telnet and user/server tftp. Drivers have been im- plemented for the 3Com Etherlink card, the Interlan Ethernet card, and the Proteon proNET card. This package is the outgrowth of an MIT research project exploring networking of small personal computers.

DOCUMENTATION:

User's manual with object; Programmer's guide with source

CPU:

IBM-PC family and other hardware-compatibles, such as Compaq

O/S:

DOS 2.0, 2.1, 3.0, or 3.1

IMPLEMENTATION-LANGUAGE:

C: Portable C cross-compiler operating under VAX UNIX, and A86 (Cross-assembler operating under VAX UNIX)

DISTRIBUTOR:

M.I.T. Microcomputer Center
Room 11-209
77 Massachusetts Ave
Cambridge, MA 02139
(617) 253-6325

Proteon, Inc.
4 Tech Circle
Natick, MA 01760
(617) 655-3340

CONTACT:

For research purposes only:
Prof. Jerome H. Saltzer, Saltzer@Athena.MIT.EDU
MIT/Laboratory for Computer Science
545 Technology Square
Cambridge, MA 02139
(617) 253-6016

ORDERING PROCEDURE:

Contact distributors

PROPRIETARY-STATUS:

Copyright by MIT with blanket permission to copy, modify, and redistribute, so long as credit is given

INFORMATION-UPDATED:

January 1986

1.12.2. FUSION IBM-PC

PRODUCT-OR-PACKAGE-NAME: FUSION-PC

DESCRIPTION:

Network software for Ethernet, Pronet, Omninet. Runs TCP/IP and/or XNS protocols. Provides file transfer (FTP/send,recv), virtual terminal (Telnet), network management. Interoperates with UNIX 4.2 BSD, socket calls. First released February 1983.

DOCUMENTATION:

User manuals for MS-DOS

CPU:

8088 (IBM PC and compatibles), 8086, 80186, 80286, 68000, 32000

O/S:

MS-DOS/PC-DOS

IMPLEMENTATION-LANGUAGE:

C, runs on system's native C compiler

DISTRIBUTOR:

Direct Sales:
Northwest: (408) 996-2056
Northeast: (617) 229-2570
Southwest: (213) 394-7200
Southeast: (703) 525-4141

CONTACT:

M.K. Graham, Northwest Sales Manager

ORDERING-PROCEDURE:

See above

PROPRIETY-STATUS:

Developed by Network Research Corporation

1.12.3. FTP IBM-PC

PRODUCT-OR-PACKAGE NAME: PC/TCP

DESCRIPTION:

PC/TCP is a commercial rewrite of the MIT PC/IP by some of its original authors. It includes FTP, Telnet, user and server TFTP, the Berkeley protocols (rlogin, rexec, rsh, rcp, lpr) and a number of other miscellaneous programs. It supports the 3COM Etherlink interface, the Proteon proNET ring interface and the Interlan NI5010 Ethernet interface.

DOCUMENTATION:

Binaries come with installation notes and a User's manual. Programming libraries and source come with a Programmer's manual.

CPU:

IBM-PC, IBM-PC/XT, IBM PC/AT and some compatibles.

O/S:

MS-DOS and PC-DOS versions 2.x and 3.x

IMPLEMENTATION-LANGUAGE:

Microsoft C

DISTRIBUTOR:

FTP Software, Inc.
PO Box 150
Kendall Square Branch
Boston, MA 02142
(617) 497-5066

CONTACT:

John Romkey, romkey@BORAX.LCS.MIT.EDU
FTP Software, Inc.
PO Box 150
Kendall Square Branch
Boston, MA 02142
(617) 497-5066

ORDERING PROCEDURE:

Contact FTP Software for a current price list. Quantity discounts and site licenses are available.

PROPRIETARY-STATUS:

Source licenses and vendor agreements are available.

INFORMATION-UPDATED:

February 1986

1.12.4. Spartacus IBM-PC

PRODUCT-OR-PACKAGE-NAME: KNET TCP/PC

DESCRIPTION:

This product enables the IBM Personal Computer to participate as host on Ethernet or any network using TCP/IP protocols. Supports TFTP and Telnet. Requires 128K bytes of memory, one disk drive, mono or color monitor with 80 column display and 3Com Etherlink Control Board. Compatible with other systems supporting TCP/IP.

DOCUMENTATION:

Available from vendor

CPU:

IBM PC, PC/XT

O/S:

DOS 2.0, 2.1, 3.0

IMPLEMENTATION-LANGUAGE:

C, 8086 Assembler

DISTRIBUTOR:

Spartacus, Inc.
One Lowell Research Center
847 Rogers Street
Lowell, MA 01852

CONTACT:

Christine Nelms, (617) 937-1600 or 1-800-LAN-KNET

PROPRIETY-STATUS:

Source code not available for purchase

INFORMATION-UPDATED:

February 1986

1.12.5. Wollongong IBM-PC

PRODUCT-OR-PACKAGE-NAME: WIN/PC

DESCRIPTION:

This TCP/IP implementation includes Telnet (remote login), TFTP (trivial file transfer), Network Statistics Utilities. Supports the following network interfaces:

- 3COM Ethernet Controller

DOCUMENTATION:

Installation Guide and Users Manual

CPU:

IBM PC, XT, AT, and IBM compatibles

O/S:

PC-DOS (MS-DOS) 2.0 and greater

IMPLEMENTATION LANGUAGE:

C

DISTRIBUTOR:

The Wollongong Group
1129 San Antonio Road
Palo Alto, CA 94303

CONTACT:

Wollongong Sales
(415) 962-7200

ORDERING PROCEDURE:

Available with support from The Wollongong Group

PROPRIETY STATUS:

W llongong

INFORMATION-UPDATED:

January 1986

1.12.6. Frontier IBM-PC

PRODUCT-OR-PACKAGE-NAME: PC-DDN

DESCRIPTION:

Frontier Technologies Corporation has introduced a hardware and software package that allows IBM-PC's, XT's and AT's (and compatibles) to communicate over DDN, The hardware consists of an intelligent communications controller (AdCom2-I) with 1/2 Megabyte of local RAM and MIL-188-144, Mil-188C interfaces. The X.25 resides in the 64 K PROM on board and is executed by the local CPU (80188). The TCP/IP is loaded in the local RAM from the PC. The resident real time operating system (VRTX) allows the highest performance execution of X.25 and TCP/IP. The ADCom2-I also rund 3270 SNA/SDLC, 3270 Bisync, and Async terminal emulations. Implementation of FTP/TELNET/SMTP is in progress.

DOCUMENTATION:

Available

CPU:

IBM-PC, XT, AT (and compatibles)

O/S:

MS-DOS and Xenix

IMPLEMENTATION-LANGUAGE:

C

DISTRIBUTOR:

Frontier Technologies Corporation
3510 N. Oakland Avenue
Milwaukee, Wisconsin 53211
(414) 964-8689

CONTACT:

Dr. Prakash Ambegaonkar, (414) 964-8689

ORDERING-PROCEDURE:

Contact Frontier Technologies

PROPRIETY-STATUS:

Frontier Technologies

INFORMATION-UPDATED:

January 1986

1.12.7. Excelan IBM-PC [DOS]

PRODUCT-OR-PACKAGE-NAME: EXOS 8051 TCP/IP for DOS-based IBM PC/XT/AT systems

DESCRIPTION:

Excelan's EXOS 8051 implements DOD standard ARPANET TCP/IP protocols to connect DOS-based IBM PC/XT/AT supermicros to Ethernet networks. Includes an I/O driver, network administration utilities, and network application utilities: file transfer and virtual terminal.

DOCUMENTATION:

EXOS 8051 TCP/IP Protocol Package for IBM PC/XT/AT (DOS) Reference Manual

CPU:

IBM PC/XT/AT (and compatibles)

O/S:

PC DOS

IMPLEMENTATION-LANGUAGE:

C

DISTRIBUTOR:

Inside Sales
Excelan, Inc.
2180 Fortune Drive
San Jose, CA 95131
(408) 434-2300

CONTACT:

Sales: Donna Keeling, (408) 434-2300

Technical: Andrea Salzman, (408) 434-2300

ORDERING-PROCEDURE:

Contact Inside Sales

INFORMATION-UPDATED:

February 1986

1.12.8. Excelan IBM-PC [XENIX]

PRODUCT-OR-PACKAGE-NAME: EXOS 8011 - TCP/IP for XENIX-based IBM PC ATs

DESCRIPTION:

Excelan's EXOS 8011 implements DOD standard ARPANET TCP/IP protocols to connect XENIX-based IBM PC ATs to Ethernet networks. Includes an I/O driver, application programming interface, network administration utilities, and network application utilities: file transfer, virtual terminal connection, and remote command execution.

DOCUMENTATION:

EXOS 8011 TCP/IP Protocol Package for IBM PC AT (XENIX) Reference Manual

CPU:

IBM-PC AT

O/S:

XENIX

IMPLEMENTATION-LANGUAGE:

C

DISTRIBUTOR:

Inside Sales
Excelan, Inc.
2180 Fortune Drive
San Jose, CA 95131
(408) 434-2300

CONTACT:

Sales: Donna Keeling, (408) 434-2300

Technical: Andrea Salzman, (408) 434-2300

ORDERING-PROCEDURE:

Contact Inside Sales

INFORMATION-UPDATED:

February 1986

1.12.9. IBM-VM

PRODUCT-OR-PACKAGE-NAME: IBM VM

DESCRIPTION:

The VM software is written almost entirely in Pascal, with a small amount of assembler-language support. Some assembler code running on the Series/1 interfaces with the X.25 code, which is a standard IBM product. Standard IBM-released software is used throughout.

TCP/IP runs in a separate disconnected virtual machine. Similarly, user SMTP, server SMTP, server FTP, and server Telnet each occupies a dedicated virtual machine. User FTP and user Telnet run within a user's virtual machine under CMS. Communication between virtual machines is done through the IBM Virtual Machine Communication Facility (VMCF). A detailed preliminary design document is available by contacting one of the individuals listed below. (Some details have changed since it was written, but it is still mostly accurate.)

A Pronet driver has been implemented to enable the IP/TCP to use the PRONET 10 megabit/sec token ring LAN. The hardware interface is via a DACU (Device Access Control Unit) provided by IBM. The DACU enables connection of UNIBUS devices to an IBM channel. A driver for Ethernet will also be provided.

Direct connection to a C/30 IMP will require implementation of a software driver in conjunction with a suitable hardware interface (e.g., DACU--LH/DH or Series/1--HDH.)

The University of Wisconsin has implemented the Internet protocols (FTP/SMTP/Telnet/TCP/IP) for IBM VM systems under contract with IBM. In addition, a software interface between IP and an X.25 implementation running on a Series/1 (RPS operating system) has been completed. The complete package will enable CSNET IBM VM hosts to connect to the DARPA Internet via TELENET. This product is available on the commercial market for VM/SP Release 3, Series/1 EDX Version 4, Series/1 RPS Version 5.2.

CPU:

Will run on any 370 architecture using VM

O/S:

VM/SP

IMPLEMENTATION-LANGUAGE:

IBM Pascal and assembler

DISTRIBUTOR:

IBM Corporation

CONTACT:

If your site is a university:

Distribution contact:
Carl VanWinter
IBM Corporation
Rochester, MN
(507) 286-3378

Technical contacts:

David DeWitt, Larry Landweber, or Marvin Solomon
Computer Science Department
University of Wisconsin
1210 W. Dayton St.
Madison, WI 53706
(608) 262-1204

If your site is not a university:

IBM Corporation
656 Quince Orchard Place
Gaithersburg, MD 20878
ATTN: VM Interface Program for TCP/IP Support Group
(301) 921-1931

ORDERING PROCEDURE:

Contact appropriate IBM location (addresses above)

1.12.10. IBM-VM WISCNET

PRODUCT-OR-PACKAGE-NAME: WISCNET

DESCRIPTION:

The University of Wisconsin has implemented the Internet protocols (FTP/SMTP/Telnet/TCP/IP) fro IBM VM systems under contract with IBM.

TCP/IP runs in a separate disconnected virtual machine. Similarly, user SMTP, server SMTP, server FTP, and server Telnet each occupies a dedicated virtual machine. User FTP and user Telnet run within a user's virtual machine under CMS. Communication between virtual machines is done through the IBM Virtual Machine Coummunication Facility (VMCF). A detailed description of the software is available from the contact listed below.

Drivers have been implemented to enable TCP/IP to use either the Proteon PRONET token ring LAN or an Ethernet. The hardware interface is via an IBM DACU (Device Access Control Unit). The DACU enables connection of UNIBUS devices to an IBM channel. A software driver for an AUSCOM interface is also available.

CPU:

Will run on any 370 architecture using VM

O/S:

VM/SP

IMPLEMENTATION-LANGUAGE:

IBM Pascal and assembler

DISTRIBUTOR:

University of Wisconsin, Madison

CONTACT:

Only if your site is a university or college (others should contact their local IBM representative for information on the IBM TCP/IP product).

Sheryl Pomraning
Computer Science Department
University of Wisconsin
1210 W. Dayton St.
Madison, WI 53706
(608) 262-1204

ORDERING-PROCEDURE:

License information is available from the above contact

INFORMATION-UPDATED:

January 1986

1.12.11. Spartacus VM

PRODUCT-OR-PACKAGE-NAME: KNET TCP/VM

DESCRIPTION:

KNET TCP/VM is a TCP/IP-based network software package supporting the Ethernet local-area network, Bisync and CTCA links. KNET conforms to the ISO/OSI Reference Model for layered network architecture and runs as an application on the mainframe. (See also "Spartacus, K200" described in the Hardware Section of this document)

Services supported include client and server Telnet, client and server FTP, client and server TFTP. An application interface to TCP virtual circuits and UDP datagram circuits is also available. In addition, the following small servers are available for UDP: time, discard, echo, name, and quote of the day. Support for TCP echo and discard services is also provided. Telnet access to all VM services is provided via 3270 emulation. Support is provided under FTP for both binary mode and for NETASCII. Automatic data conversion to/from ASCII to EBCDIC is supported. No modification of VM/SP is required. All services run either under CMS or as a guest operating system under CP. SMTP option us available. KNET/VM also supports XNS protocols.

DOCUMENTATION:

Available from vendor

CPU:

IBM 370 class or equivalent

O/S:

VM/SP Rel 3 or later

IMPLEMENTATION-LANGUAGE:

Assembler and C

DISTRIBUTOR:

Spartacus, Inc.
One Lowell Research Center
847 Rogers Street
Lowell, MA 01852

CONTACT:

Christine Nelms, (617) 937-1600 or 1-800-LAN-KNET

PROPRIETY-STATUS:

Source code not available for purchase

INFORMATION-UPDATED:

February 1986

1.12.12. IBM UNIX

PRODUCT-OR-PACKAGE-NAME: IBM-FED-SYS

DESCRIPTION:

IBM Fed Sys Division is working on a Series/1 FEP for interface to the DDN/ARPANET. That box will be based on a Series 1 that was done for USA DARCOM by Channel Systems, Inc. as a sub to IBM. The Channel Systems box was acquired to attach to the IBM I/O channel to provide the host an HDH/HDLC interface to a remote IMP.

McKay is expanding the DARCOM box to run IBM UNIX and will then migrate an existing UNIX-based TCP/IP to it. The resulting FEP would allow the host to implement FTP, Telnet and Mail and rely on the Series/1 for TCP/IP and connection to the net. There are some efforts to pick up the completed UCLA implementation and support it as a complete package or as host-based FTP, Mail and Telnet for use with the Series/1 FEP.

O/S:

IBM UNIX

DISTRIBUTOR:

IBM Federal Systems Division

CONTACT:

Doug McKay, (301) 921-1914

1.12.13. UCLA MVS

PRODUCT-OR-PACKAGE-NAME: UCLA ACP

DESCRIPTION:

This is a full-service package of software and technical support services for interfacing IBM MVS computing enviroments to the Defense Data Network. It is based on the UCLA ARPANET Control Program.

DOCUMENTATION:

A product description document is available

CPU:

IBM S/370, 43xx, 303x, 308x and PCMs

O/S:

MVS/SP Version 1 with ACF/VTAM Release 1.3

Note: The PL/I resident library is required for the TSO command processor

IMPLEMENTATION-LANGUAGE:

Assembler H (98%)

PL/I (TSO command processor and utilities)

DISTRIBUTOR:

Network Solutions, Inc.
Advanced Communciations Division
8229 Boone Boulevard, 7th Floor
Vienna, Virginia 22180

CONTACT:

Will McDuffie (800) 332-7240, ns-ddn@DDN2.ARPA

In Virginia: (703) 749-2440

ORDERING-PROCEDURE:

To be determined. (Contact Network Solutions)

PROPRIETY-STATUS:

Public domain, except for (1) "C" library sources, avaliable only to sites with AT&T C/370 license, and (2) source for full-screen 3278 extensions, available only with IBM FSD approval

INFORMATION-UPDATED:

January 1986

1.12.14. Internet MVS

PRODUCT-OR-PACKAGE-NAME: HYPER-Link

DESCRIPTION:

Hyper-Link is a series of communications software and hardware products which meet the Defense Communication Agency MIL-STDs for the Defense Data Network, for use on any of the DDN networks, such as ARPANET, MILNET, etc. These products also conform to the conventions of the UNIX 4.2 BSD implementation of these protocols for use with the many popular UNIX based graphic workstations, such as SUN, APOLLO, CIMLINK, CADNETIX, VALID LOGIC and others.

Hyper-Link supplies TCP/IP communication protocol software products, an Application Programming Interface to TCP functions for PASCAL, PLl, and BAL, and the MIL-STD applications File Transfer (FTP), Virtual Terminal (TELNET), and Simple Mail Transfer (SMTP).

Hyper-Link connects the IBM MVS host to Ethernet or DDN X.25 networks through a channel attached Front End Processor. DDN LHDH attachment is also supported. The X.25 connection can also be made certifiable to certain commercial X.25 networks such as GTE TELENET, TYMNET and others.

DOCUMENTATION:

A full set of documentation is available.

CPU:

IBM 37XX or 43XX

O/S:

MVS

IMPLEMENTATION-LANGUAGE:

PASCAL

DISTRIBUTOR:

Internet Systems Corporation
8360 W. Oakland Park Blvd.
Sunrise, Florida 33321

CONTACT:

Mary Bloch, (305) 742-0301

ORDERING-PROCEDURE:

Submit purchase order to above address.

See above contact for pricing.

PROPRIETARY-STATUS:

Product of Internet Systems Corporation

INFORMATION-UPDATED:

February 1986

1.12.15. Spartacus MVS

PRODUCT OR PACKAGE NAME: KNET TCP/MVS

DESCRIPTION:

KNET TCP/MVS is a TCP/IP-based network software package supporting the Ethernet local area network and channel-to-channel adapters. KNET conforms to the ISO/OSI Reference Model for layered network architecture and runs as a started task under the control of MVS. (See also, "Spartacus, K200" described in the Hardware Section of this document).

Users of KNET can perform complex operations such as file transfer and remote applications access between heterogeneous systems. Through the use of KNET, any system implementing TCP/IP protocols can communicate with the IBM host on the Ethernet. KNET implements FTP (file transfer protocol), TFTP (trivial file transfer protocol), and Telnet (remote logon services).

KNET TCP/MVS provides a set of routines that allow a user to write cooperating network applications. These routines provide the interface between a user application and TCP/IP network layers.

DOCUMENTATION:

Available from vendor

CPU:

IBM 370 class or equivalent

O/S:

MVS/SP Release 1.3 or later, operating system with VTAM

IMPLEMENTATION-LANGUAGE:

Assembler and C

DISTRIBUTOR:

Spartacus, Inc.
One Lowell Research Center
847 Rogers Street
Lowell, MA 01852

CONTACT:

Christine Nelms, 617-937-1600 or 800-LAN-KNET

PROPRIETY-STATUS:

Source code not available for purchase

INFORMATION-UPDATED:

February 1986

1.12.16. Spartacus 310

PRODUCT OR PACKAGE NAME: K310 T1/Ethernet System

DESCRIPTION:

The K310 is a communications system that connects a mainframe computer to the Ethernet local area network using a T1 wide area network data link. The K310 consists of a host control unit and Ethernet control unit interconnected by any T1 data link facility.

The host control unit and the Ethernet control unit are interconnected using any T1 wide area network data link. T1 data links allow full duplex data transfers at 1.54 megabits per second in each direction providing instantaneous capacity in excess of 3 megabits per second.

Supported data links include local lines, long-haul lines, satellite links, microwave links, fiber optic links, broadband CATV networks and others.

K310 implements the Physical and Data Link layers of the ISO/OSI Reference Model for layered network architecture, and conforms to the specifications for IBM I/O channels, Ethernet LANs, and ATT Accunet T1 service.

DOCUMENTATION:

Available from vendor

CPU:

IBM 370, IBM 3OXX, or PCM

DISTRIBUTOR:

Spartacus, Inc.
One Lowell Research Center
847 Rogers Street
Lowell, MA 01852

CONTACT:

Christine Nelms, 617-937-1600 or 800-LAN-KNET

PROPRIETY PRODUCT:

Spartacus product

INFORMATION-UPDATED:

February 1986

1.12.17. Softsel MVS

PRODUCT-OR-PACKAGE-NAME: SOFTSEL-MVS

DESCRIPTION:

Software implementation of File Transfer Protocol (FTP), Network Virtual Terminal Protocol (TELNET) and Simple Mail Transfer Protocol (SMTP). Runs on top of TCP/IP or NETEX (using a separate TCP Emulator).

DOCUMENTATION:

User documentation and installation instructions are included

CPU:

IBM 43xx and compatible machines

O/S:

MVS

IMPLEMENTATION-LANGUAGE:

PL/1 and Assembler H

DISTRIBUTOR:

Softsel Incorporated
601 Ewing Street
Princeton, NJ 08540
(601) 683-1150

ORDERING-PROCEDURE:

Contact SCP Product Manager at Softsel Incorporated

PROPRIETY-STATUS:

Proprietary product of Softsel Incorporated (NETEX is a trademark of Network Systems Corporation)

INFORMATION-UPDATED:

December 1985

1.13. LISP Machine

1.13.1. LMI

PRODUCT-OR-PACKAGE-NAME: LMI TCP/IP

DESCRIPTION:

An Excelan-Exos-101/200 series network front-end processor residing on the Multibus of an LMI-Lambda family multi-processor computer provides TCP and UDP services to the application programs TELNET, FTP, IMAGEN and others. The applications are integrated into the generic device, pathname, filesystem, or network systems of the operating system, wherever applicable for transparent and automatic usage. The UNIX operating system support provided by Excelan for the front-end is also available and runs concurrently on a 68010 processor.

DOCUMENTATION:

Available from vendor

CPU:

LMI Lambda under the ZetaLisp-Plus operating system concurrently with a 68010 under the UNIX operating system

O/S:

ZetaLisp-Plus Release 2.0 or later, UNIX System V

IMPLEMENTATION-LANGUAGE:

Lisp, C

DISTRIBUTOR:

Lisp Machine, Inc.
1000 Massachusetts Avenue
Cambridge, MA 02138

CONTACT:

Local LMI Sales Office or LMI, Inc.

(Sales: Jane Relihan) (617) 682-0500

ORDERING-PROCEDURE:

Contact LMI Marketing

PROPRIETY-STATUS:

Proprietary product of Lisp Machine, Inc.

INFORMATION-UPDATED:

January 1986

1.14. Perkin-Elmer

1.14.1. Perkin-Elmer HYPER-Link

PRODUCT-OR-PACKAGE-NAME: HYPER-Link

DESCRIPTION:

Hyper-Link is a series of communications software and hardware products which meet the Defense Communications Agency MIL-STDs for the Defense Data Network, for use on any of the DDN networks, such as ARPANET, MILNET, etc. These products also conform to the conventions of the UNIX 4.2 BSD implementation of these protocols for use with the many popular UNIX based graphic workstations, such as SUN, APOLLO, CIMLINK, CADNETIX, and others.

Hyper-Link supplies TCP/IP communication protocol software products, an Application Programming Interface to TCP functions for PASCAL and Assembly, and the MIL-STD applications File Transfer (FTP), Virtual Terminal (TELNET), and Simple Mail Transfer (SMTP).

Hyper-Link for Concurrent Computer (Perkin Elmer) 0S/32 systems uses the PE Ethernet Data Link Controller. DDN access via X.25 is scheduled to be available after July 1986.

DOCUMENTATION:

A full set of documentation is available.

CPU:

Perkin-Elmer 32XX

O/S:

OS/32

IMPLEMENTATION-LANGUAGE:

PASCAL

DISTRIBUTOR:

Internet Systems Corporation
8360 W. Oakland Park Blvd.
Sunrise, Florida 33321

CONTACT:

Mary Bloch, (305) 742-0301

ORDERING-PROCEDURE:

Submit purchase order to above address.

See above contact for pricing.

PROPRIETARY-STATUS:

Product of Internet Systems Corporation

INFORMATION-UPDATED:

February 1986

1.15. PRIME

1.15.1. PRIME 50 Series

PRODUCT-OR-PACKAGE-NAME: PRIME TCP/IP

DESCRIPTION:

This is a TCP/IP-based network software package which uses X.25 as the ISO model Network Layer.

Services supported include SMTP, client and server FTP, client and server Telnet. A set of interface libraries is provided to enable applications coded in any PRIME-supported language to utilize TCP/IP for communications. In addition, the TCP Daytime, Character Generator, Discard, and Active Users protocol servers and PRIMOS command processors are provided. It will be available in late February 1986.

DOCUMENTATION:

use of the generic network systems is documented in standard manuals describing TCP/IP. A Prime computer system installation and user guide is also provided.

CPU:

All PRIME 50-series computers:

2350, 2450 (Tower packaging systems); 2250, 2655 (Office packaging);

9655, 9750, 9955 (Computer room packaging)

O/S:

PRIMOS (Revision 19.4.5 or later)

IMPLEMENTATION-LANGUAGE:

FTP, SMTP, Telnet in C; other code in PRIME's SPL,PLP,PMA

DISTRIBUTOR:

PRIME Computer
Custom Systems Group
492 Old Connecticut Path
Framingham, MA 01701

CONTACT:

PRIME Custom Systems Group, (617) 626-1700 ext. 3869

ORDERING-PROCEDURE:

Contact Prime Custom Systems Group

PROPRIETY-STATUS:

Product of PRIME Computer, Inc.

INFORMATION-UPDATED:

February 1986

1.16. RIDGE

1.16.1. RIDGE

PRODUCT NAME: Ridge TCP/IP

DESCRIPTION:

This product is based on the 4.2 BSD release which includes Telnet, FTP and the 4.2 programs--rlogin, rcp, rsh, ruptime and rwho. In addition, the CMU packet filter for Ethernet is also part of the release.

DOCUMENTATION:

Available

CPU:

Ridge 32

O/S:

ROS 3.3

IMPLEMENTATION-LANGUAGE:

C

DISTRIBUTOR:

Ridge Computers
2451 Mission College Blvd.
Santa Clara, CA 95054

CONTACT:

Larry Lunetta, Director, Marketing, (408) 986-8500

ORDERING-PROCEDURE:

Call or write for information

INFORMATION-UPDATED:

January 1986

1.17. Sperry

1.17.1. Maryland TCP/IP

PRODUCT-OR-PACKAGE-NAME: SPERRY-UNIVAC

DESCRIPTION:

The University of Maryland Computer Science Center has implemented TCP/IP for the SPERRY 1100/60/70/80/90 machines. The implementation supports IP, ICMP, TCP, SMTP, and Telnet. The link layer connection is made via the DCNET local-network protocol. The IP level conforms to RFC791, and supports reassembly and extended addressing. ICMP functions are implemented per RFC792 and support destination-unreachable, redirects, echo and timestamps. The TCP conforms to the RFC793 except that security, precedence and URGENT have not yet been implemented. An STMP server is also supplied.

DOCUMENTATION:

User and internals documents are included with distribution

CPU:

SPERRY 1100/60, 1100/70, 1100/80, 1100/90

O/S:

OS1100 (Level 37R2C or later)

IMPLEMENTATION-LANGUAGE:

MASM and PLUS 5R1 or later

DISTRIBUTOR:

University of Maryland
Computer Science Center - Systems Programming
College Park, MD 20742

CONTACT:

Mike Petry, (PETRY@UMD-UNIVAC.ARPA)
Louis Mamakos, (LOUIE@UMD-UNIVAC.ARPA)
(301) 454-2946

ORDERING-PROCEDURE:

Contact above-named individuals for current procedure

PROPRIETY-STATUS:

Public domain (at this time)

HOSTS:

UMD-UNIVAC [128.8.0.8], UMD-UNIVAC-TEST [128.8.0.7]

1.17.2. Sperry-1100

PRODUCT-OR-PACKAGE-NAME: SPERRY-1100

DESCRIPTION:

The following DDN protocols are supported in this implementation: IP, ICMP, TCP, Telnet, FTP and SMTP. In addition, X.25 and HDLC Distant Host are supported. FTP and SMTP are implemented within DDP in the 1100 host. All other protocols are implemented within TELCON. Two hardware configurations are required as a minimum at each Series 1100 host location: an 1100/60, 1100/70, 1100/80 or 1100/90 computer and a Distributed Communications Processor (DCP/40, DCP/20 or DCP/10A) as a front-end. The DCP's may also be configured as remote concentrators to provide remote terminal access to DDN hosts. A medium or high-speed loadable line module configured to support bit-synchronous communications protocols is required in the DCP to support the HDLC interface.

Full interoperability of the X.25 interface as a heterogeneous DDN host is targeted for January 1986. The DDN X.25 interface was unconditionally qualified with DCA in February of 1985.

DOCUMENTATION:

Available from vendor

CPU:

Sperry 1100 60/70/80/90 and Sperry DCP 40/20/10A

O/S:

OS 1100; TELCON

IMPLEMENTATION-LANGUAGE:

PLUS for 1100 software; TELCON assembler for DCP

DISTRIBUTOR:

Sperry Corporation
8008 Westpark Drive
McLean, VA 22102

CONTACT:

Technical:
Dale Pluta
(703) 749-6727

Sales:
John Flynn
(703) 749-6701

ORDERING-PROCEDURE:

Vendor restricted distribution; contact sales rep.

PROPRIETY-STATUS:

Proprietary product of Sperry

INFORMATION-UPDATED:

February 1986

1.17.3. Sperry Series 5000

PRODUCT-OR-PACKAGE-NAME: SPERRY DDN-5000

DESCRIPTION:

The following DDN protocols are supported: DDN X.25, IP, ICMP, TCP, Telnet, FTP, and SMTP. The electrical interfaces conforms to EIA RS-449/442.

DOCUMENTATION:

Available from vendor

CPU:

Sperry 5000/20, 5000/40, 5000/60, and 5000/80

O/S:

UNIX System V Release 2.0

IMPLEMENTATION-LANGUAGE:

C

DISTRIBUTOR:

SPERRY Corporation
8008 Westpark Drive
Mclean, VA 22102

CONTACT:

Technical: Dale Pluta, (703) 749-6727

Sales: Ray Shoemake, (703) 556-5268

ORDERING-PROCEDURE:

Vendor restricted distribution; contact sales rep.

PROPRIETY-STATUS:

Proprietary product of Sperry

INFORMATION-UPDATED:

February 1986

1.17.4. Sperry HYPER-Link

PRODUCT-OR-PACKAGE-NAME: HYPER-Link

DESCRIPTION:

Hyper-Link is a series of communications software and hardware products which meet the Defense Communication Agency MIL-STDs for the Defense Data Network, for use on any of the DDN networks, such as ARPANET, MILNET, etc. These products also conform to the conventions of the UNIX 4.2 BSD implementation of these protocols for use with the many popular UNIX based graphic workstations, such as SUN, APOLLO, CIMLINK, CADNETIX, VALID LOGIC and others.

Hyper-Link supplies TCP/IP communication protocol software products, an Application Programming Interface to TCP functions for PASCAL and MASM, and the MIL-STD applications File Transfer (FTP), Virtual Terminal (TELNET), and Simple Mail Transfer (SMTP).

Hyper link connects the SPERRY 1100 host to Ethernet or DDN X.25 networks through a channel attached Front End Processor. DDN LHDH attachment is also supported. The X.25 connection can also be made certifiable to certain commercial X.25 networks such as GTE TELENET, TYMNET and others.

DOCUMENTATION:

A full set of documentation is available.

CPU:

Sperry 11XX

O/S:.

OS/1100

IMPLEMENTATION-LANGUAGE:

PASCAL

DISTRIBUTOR:

Internet Systems Corporation
8360 W. Oakland Park Blvd.
Sunrise, Florida 33321

CONTACT:

Mary Bloch, (305) 742-0301

ORDERING-PROCEDURE:

Submit purchase order to above address.

See above contact for pricing.

PROPRIETARY-STATUS:

Product of Internet Systems Corporation

INFORMATION-UPDATED:

February 1986

1.18. Sun Microsystems

1.18.1. Sun-68000

PRODUCT-OR-PACKAGE-NAME: Sun Workstation, SunLink Internetwork Router

DESCRIPTION:

The Sun workstation was based on a design by Stanford University and is now a family of commercial computer products. The Sun-2 workstations use the Motorola 68010 virtual memory processor and run 4.2 BSD VMUNIX with compatibility enhancements of AT&T System V. The Sun-3 family uses the Motorola 68020 32-bit processor and 68881 floating-point processor for higher performance. The basic workstation and server products use 4.2 BSD TCP/IP protocols in conjunction with a 10 Mb/second Ethernet local-area network. In addition to the standard internet protocols, Sun supports the same services as the 4.2 BSD VAX UNIX network software: RLOGIN, RSH, RWHO, RUPTIME, DSH, ROUTED, REXECD, and COURIER.

The SunLink product is available to implement point-to-point internetwork links, using either one of the CPU's standard serial ports (up to 9.9 kbps) or using the Sun Communications Processor for higher speeds (up to 56 kbps). 1822 interface software is available from SRI, and multiple Ethernet controllers are supported. Software products also provide gateways to HDLC, X.25, Bisync, and IBM SNA networks.

Sun has developed the Network File System protocol to allow workstations to share file systems across the network. The NFS is implemented on a Remote Procedure Call protocol, and External Data Representation (RPC and XDR) standard, to allow portability across different computer architectures. The Yellow Pages protocols are used to provide domain-wide distributed administrative databases such as user names, and mail aliases. All of these protocols use the DARPA standard Internet Protocol (IP).

DOCUMENTATION:

Available from vendor

CPU:

Motorola 68010 or 68020

O/S:

UNIX, Berkeley 4.2 BSD and AT&T System V

IMPLEMENTATION-LANGUAGE:

C

DISTRIBUTOR:

Sun Microsystems, Inc.
2550 Garcia Avenue
Mountain View, CA 94043

CONTACT:

General Information: (800) 821-4643 (in CA: (800) 821-4642)

ORDERING-PROCEDURE:

Available from vendor

PROPRIETY-STATUS:

All network source code is available for those desiring to add device drivers and net utilities. The Network File System is available for license to other vendors. The Remote Procedure Call and External Data Representation libraries have been made publicly available at no charge.

HOSTS:

There are over 350 Sun Workstations on the DARPA Internet, as of December 1985.

INFORMATION-UPDATED:

December 1985

1.19. Symbolics

1.19.1. Symbolics LISP Machine

PRODUCT-OR-PACKAGE-NAME: Symbolics TCP/IP

DESCRIPTION:

An implementation of the Internet protocol family for Symbolics 36xx Machines running release 5.2 or later. This includes IP, ICMP, TCP, and UDP. Higher level protocols supported include Telnet, SUPDUP, FTP, SMTP and TFTP. TCP/IP is completely integrated in the Lisp Machine generic network system and will be used by the system automatically whenever necessary.

DOCUMENTATION:

Use of the generic network system is documented in standard manuals and is available online through a keyword lookup system.

CPU:

Symbolics Machine (3600, 3640 and 3670)

O/S:

Symbolics Lisp System (Release 5 or later)

IMPLEMENTATION-LANGUAGE:

Lisp Machine LISP

DISTRIBUTOR:

Symbolics, Inc.
4 Cambridge Center
Cambridge, MA 02142

CONTACT:

Local Symbolics sales office or Symbolics, Inc. (Sales), (617) 576-2600

ORDERING-PROCEDURE:

Contact Symbolics Marketing

PROPRIETY-STATUS:

Proprietary product of Symbolics, Inc.

INFORMATION-UPDATED:

December 1985

1.20. Tandem Computers, Incorporated

1.20.1. [Guardian/NonStop II]

DESCRIPTION:

Tandem is currently developing TCP/IP to run with X.25. It is expected to be available in the fall of 1986. Telnet, FTP and SMTP are the upper layer protocols under development also.

DOCUMENTATION:

Users manuals will be available when products are released

CPU:

Tandem NonStop II and Txp Processors

O/S:

Guardian

IMPLEMENTATION-LANGUAGE:

TAL

DISTRIBUTOR:

Tandem Computers
19333 Vallco Parkway
Cupertino, CA 95014

CONTACT:

Jaime Evans (703) 476-3207

ORDERING-PROCEDURE:

Contact Tandem

PROPRIETY-STATUS:

Tandem proprietary product

INFORMATION-UPDATED:

February 1986

1.21. MULTIPLE-MACHINE IMPLEMENTATIONS

1.21.1. Communication Machinery Corporation

PRODUCT-OR-PACKAGE-NAME: CMC Internet TCP/IP

DESCRIPTION:

An implementation of TCP/IP for UNIX System V and 4.2 BSD systems with CMC's DDN Node Processor (DNP), Front-End Processor for MULTIBUS. The TCP, IP, ICMP, and UDP protocols run on the DNP; the applications, which run on the host UNIX system, include TELNET, FTP, SMTP, rlogin, rsh and rcp.

DOCUMENTATION:

System calls as documented in 4.2 BSD documentation. Also from CMC:

- Internet User's Guide
- Internet Programming Guide
- Internet System Manager Guide

CPU:

DNP-30 for MULTIBUS

O/S:

UNIX System V, UNIX 4.2 BSD

IMPLEMENTATION LANGUAGE:

C

DISTRIBUTOR:

Communication Machinery Corporation
1421 State St.
Santa Barbara, CA 93101

CONTACT:

Russ Sharer
(805) 963-9471

ORDERING PROCEDURE:

Contact CMC Marketing

PROPRIETY STATUS:

CMC Proprietary

INFORMATION-UPDATED:

November 1985

1.21.2. CMC-Ethernet

PRODUCT-OR-PACKAGE-NAME: CMC Internet TCP/IP for Ethernet

DESCRIPTION:

An implementation of TCP/IP for UNIX System V and 4.2 BSD systems with CMC's Ethernet Node Processor family of Front-End Processors for Ethernet. ENP's are available for VMEbus, VERSAbus, MULTIBUS, UNIBUS, Qbus, and IBM PC/AT. The TCP, IP, ICMP, and UDP protocols run on the ENP; the applications, which run on the host UNIX system, include TELNET, FTP, SMTP, rlogin, rsh and rcp.

DOCUMENTATION:

System calls as documented in 4.2 BSD documentation. Also from CMC:

- Internet User's Guide
- Internet Programming Guide
- Internet System Manager Guide

CPU:

ENP-10 for VMEbus ENP-40 for UNIBUS ENP-20 for VERSAbus ENP-50 for Qbus ENP-30 for MULTIBUS ENP-60 for IBM PC/AT

O/S:

UNIX System V, UNIX 4.2 BSD

IMPLEMENTATION LANGUAGE:

C

DISTRIBUTOR:

Communication Machinery Corporation
1421 State St.
Santa Barbara, CA 93101

CONTACT:

Russ Sharer
(805) 963-9471

ORDERING PROCEDURE:

Contact CMC Marketing

PROPRIETY STATUS:

CMC Proprietary

INFORMATION-UPDATED:

November 1985

AD-A165 418 TCP/IP IMPLEMENTATIONS AND VENDORS GUIDE(U) STANFORD RESEARCH INST MENLO PARK CALIF NETWORK INFORMATION CENTER O JACOBSEN ET AL. FEB 86 NIC-50002 2/2

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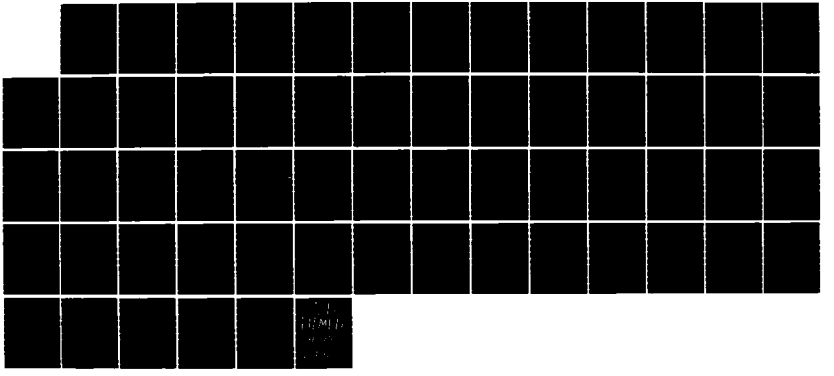

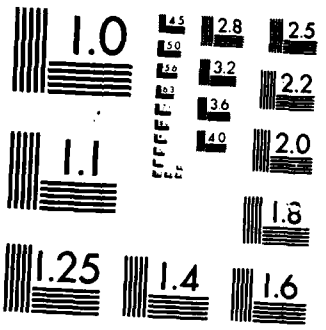

MICROCOPY RESOLUTION TEST CHART
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1.21.3. CMC-QM100

PRODUCT-OR-PACKAGE-NAME: QM100

DESCRIPTION:

A software package implementation of the TCP/IP/ICMP/UDP protocols. A multi-channel TCP/IP implementation available in source code (C language) for the user to compile and integrate into his or her application.

DOCUMENTATION:

QM100 User Interface Specification

CPU:

Any

O/S:

Any

IMPLEMENTATION LANGUAGE:

C

DISTRIBUTOR:

Communication Machinery Corporation
1421 State St.
Santa Barbara, CA 93101

CONTACT:

Russ Sharer
(805) 963-9471

ORDERING PROCEDURE:

Contact CMC Marketing

PROPRIETY STATUS:

CMC Proprietary

INFORMATION-UPDATED:

November 1985

1.21.4. Excelan EXOS 8010

PRODUCT-OR-PACKAGE-NAME: EXOS 8010

DESCRIPTION:

The EXOS 8010 Protocol Package consists of two parts. One, the TCP/IP protocol module, is downloaded to any of Excelan's EXOS 200 series Intelligent Ethernet Controllers (described separately-see the Hardware Section of this document). Running this code, the controller then provides TCP,UDP, and IP services to the host system. The protocol module is supplied in object form. It can be used with any host system, and is independent of operating system design. The second part of the EXOS 8010 product consists of I/O drivers, libraries, and utilities which can be integrated with any version of the UNIX operating system. These emulate the BSD network interface model, and include applications such as FTP, rlogin, rsh, rcp, and mail.

DOCUMENTATION:

Available from Excelan

CPU:

Any

O/S:

UNIX

IMPLEMENTATION-LANGUAGE:

C language

DISTRIBUTOR:

Excelan
2180 Fortune Drive
San Jose, CA 95131

CONTACT:

Sales: Donna Keeling, (408) 434-2300

Technical: Andrea Salzman, (408) 434-2300

ORDERING-PROCEDURE:

Contact Excelan

PROPRIETY-STATUS:

Excelan Product

INFORMATION-UPDATED:

January 1986

1.21.5. FUSION UNIX

PRODUCT-OR-PACKAGE-NAME: FUSION-UNIX

DESCRIPTION:

Network software for Ethernet, Pronet, Omninet. Runs TCP/IP and/or XNS protocols. Provides file transfer (FTP/send,recv), virtual terminal (Telnet), network management. Interoperates with 4.2 UNIX, socket calls. First released February 1983.

DOCUMENTATION:

User manuals for UNIX

CPU:

8088 (IBM PC and compatibles), 8086, 80186, 80286, 68000, 32000, PDP-11, VAX, Rainbow, DEC Pros

O/S:

UNIX: 4.1, 4.2, System 3, Version 7, System V, Xenix, Venix, PC-IX

IMPLEMENTATION-LANGUAGE:

C, runs on system's native C compiler

DISTRIBUTOR:

Direct Sales:
Northwest: (408) 996-2056
Northeast: (617) 229-2570
Southwest: (213) 394-7200
Southeast: (703) 525-4141

CONTACT:

M.K. Graham, Northwest Sales Manager

ORDERING-PROCEDURE:

See above

PROPRIETY-STATUS:

Developed by Network Research Corporation

1.21.6. FUSION VMS

PRODUCT-OR-PACKAGE-NAME: FUSION-VMS

DESCRIPTION:

Network software for Ethernet, Pronet, Omninet. Runs TCP/IP and/or XNS protocols. Provides file transfer (FTP/send,recv), virtual terminal (Telnet), network management. Interoperates with UNIX 4.2 BSD socket calls. First released February 1983.

DOCUMENTATION:

User manuals for VMS

CPU:

PDP-11, VAX, Rainbow, DEC Pros

O/S:

UNIX: 4.1, 4.2, System3, Version 7, System 5, Xenix, Venix, VMS

IMPLEMENTATION-LANGUAGE:

C, runs on system's native C compiler

DISTRIBUTOR:

Direct Sales:
Northwest: (408) 996-2056
Northeast: (617) 229-2570
Southwest: (213) 394-7200
Southeast: (703) 525-4141

CONTACT:

M.K. Graham, Northwest Sales Manager

ORDERING-PROCEDURE:

See above contact

PROPRIETY-STATUS:

Developed by Network Research Corporation

1.21.7. LANlord

PRODUCT-OR-PACKAGE-NAME: LANlord High Speed Networking System

DESCRIPTION:

This is a high performance back-end LAN (25 Mb/s) designed to physically, electronically and logically connect mainframe computers and other networking technologies.

Release ONE of LANlord supports TCP/IP-based host software from Internet Systems Corporation and is available now.

Release TWO of LANlord implements TCP/IP protocols on the network, supports FTP applications on the host, and will available 3rd quarter 1986.

LINKlord gateways implementing T-1 links between LANlord networks are available now. A LINKlord gateway to Ethernet will be availble 2nd quarter 1986.

CPU:

IBM, DEC (all processors interfacing to DEC DR11-W)

O/S:

MVS, VMS

DISTRIBUTOR:

Computer Network Technology
9440 Science Center Drive
New Hope, MN 55428

CONTACT:

Bob Lutnicki, (800) 638-8324

ORDERING-PROCEDURE:

Call for information

INFORMATION-UPDATED:

February 1986

1.21.8. Unisoft UNIX

PRODUCT-OR-PACKAGE-NAME: B-NET

DESCRIPTION:

The UNIPLUS+ networking software which offers multiple and interactive links between UNIPLUS+ based systems (68000-based) and other computers running TCP/IP compatible protocols. The interconnected systems may use a variety of physical layers including Ethernet LAN products and may be geographically distributed or physically adjacent to one another and interconnected in a variety of topologies.

B-NET features include: process-to-process communication, remote file transfer, virtual terminal facilities, datagram service, electronic mail, automatic route-through, flexibility for adding additional network drivers, and access to all levels of protocols.

This software is basically an enhanced version of Berkeley's 4.2 UNIX.

DOCUMENTATION:

Available through vendor

CPU:

68000-based systems

O/S:

Unisoft UNIX (Berkeley's 4.2 with enhancements)

IMPLEMENTATION-LANGUAGE:

C

DISTRIBUTOR:

Unisoft Systems
2405 Fourth Street
Berkeley, CA 94710

CONTACT:

Bill Northlich, (415) 644-1230

2. TCP/IP HARDWARE IMPLEMENTATIONS

2.1. Advanced Computer Communications

2.1.1. ACC-ECU

PRODUCT-OR-PACKAGE-NAME: ECU-II

DESCRIPTION:

The Error Control Unit provides an error-controlled link for long distance connection of LH-DH/11 to DDN IMPs. Data transfer between ECU-II units can take place at 1.5Mb/s when directly connected by a 4-pair low capacitance cable up to 914 meters (3000 feet) in length. Lower rates can be selected or determined by attached modem types 303, 209, V.35, or 188-114. Units are in pairs, one at each end of the communication link. The data rate is enhanced by elimination of the need for inter resource "handshaking" on every bit transferred. The units serve as store-and-forward buffers, receiving and buffering resource-generated data in semi-conductor RAMs, then forwarding it by special protocol to the ECU near the other resource device. Since the ECUs have two separate buffers they are capable of simultaneous receipt and transmission in each direction. ECUs communicate with the IMP via direct cable or modems and support BBN-1822 protocol. Compatible with native mode C/30 IMPs and TCP/IP.

DOCUMENTATION:

Fully documented vendor product; descriptive literature available

DISTRIBUTOR:

ACC (Advanced Computer Communications)
720 Santa Barbara Street
Santa Barbara, CA 93101

CONTACT:

Technical & Sales:
Gary Krall, (Gary@ACC.ARPA)
Program Manager, Government Systems
(805) 963-9431

ORDERING-PROCEDURE:

Vendor product, contact sales rep.

PROPRIETY-STATUS:

Proprietary product of ACC

INFORMATION-UPDATED:

January 1986

2.1.2. ACC-IF-11Q/1822

PRODUCT-OR-PACKAGE-NAME: IF-11Q/1822

DESCRIPTION:

Full-duplex DMA controller used to attach a DEC LSI-11 to a DDN IMP. Operates in Local Host or Distant Host modes. If more than one IMP connection is required, optional XQ/1822 boards can be added.

DOCUMENTATION:

Fully documented vendor product; descriptive literature available

CPU:

PDP-11/03 and PDP-11/23

DISTRIBUTOR:

ACC (Advanced Computer Communications)
720 Santa Barbara Street
Santa Barbara, CA 93101

CONTACT:

Technical & Sales:
Gary Krall, (Gary@ACC.ARPA)
Program Manager, Government Systems
(805) 963-9431

ORDERING-PROCEDURE:

Vendor product, contact sales rep.

PROPRIETY-STATUS:

Proprietary product of ACC

INFORMATION-UPDATED:

January 1986

2.1.3. ACC-IF-6000/1822

PRODUCT-OR-PACKAGE-NAME: IF-6000/1822

DESCRIPTION:

Communications interface between Honeywell 6000 processor and DDN-compatible 1822 devices. Operates in Local or Distant Host modes.

DOCUMENTATION:

Fully documented vendor product; descriptive literature available

CPU:

Honeywell 6000 series

O/S:

MULTICS

DISTRIBUTOR:

ACC (Advanced Computer Communications)
720 Santa Barbara Street
Santa Barbara, CA 93101

CONTACT:

Technical & Sales:
Gary Krall, (Gary@ACC.ARPA)
Program Manager, Government Systems
(805) 963-9431

ORDERING-PROCEDURE:

Vendor product, contact sales rep.

PROPRIETY-STATUS:

Proprietary product of ACC

INFORMATION-UPDATED:

January 1986

2.1.4. ACC-IF-370/DDN

PRODUCT-OR-PACKAGE-NAME: IF-370/DDN

DESCRIPTION:

This implementation provides for either X.25 or HDH (1822J) connections to the block multiplexer I/O channel of an IBM 370-type system. It contains firmware necessary to operate X.25 or HDH protocols. MVS operating system support provided by the UCLA ARPANET Control Program.

CPU:

IBM-370, 43xx, 30xx, Amdahl, Magnason, Hitachi

O/S:

MVS

IMPLEMENTATION-LANGUAGE:

C

DISTRIBUTOR:

ACC (Advanced Computer Communications)
720 Santa Barbara Street
Santa Barbara, CA 93101

CONTACT:

Technical & Sales:
Gary Krall, (Gary@ACC.ARPA)
Program Manager, Government Systems
(805) 963-9431

ORDERING-PROCEDURE:

See above

PROPRIETY-STATUS:

Proprietary product of ACC

INFORMATION-UPDATED:

January 1986

2.1.5. ACC-IF-IMP/370

PRODUCT-OR-PACKAGE-NAME: IF-IMP/370 (IF-370/1822)

DESCRIPTION:

Connects an IBM host computer to the DDN. It provides a DDN X.25 or HDH (1822-J) access to the DDN Interface Message Processor (IMP). The IF-370/DDN attaches to the Block Multiplexer Channel of any IBM 370, 303x, 43xx, or 308x systemn, or to the Block Multiplexer Channel of plug-compatible systems produced by other manufacturers (e.g. Amdahl). Host resident TCP/IP support for MVS systems to be provided by Network Solutions. MVS operating system support provided by the UCLA ARPANET Control Program.

DOCUMENTATION:

Fully documented vendor product; descriptive literature available

CPU:

IBM-370, 43XX, AMDAHL, MAGNASON

O/S:

MVS

DISTRIBUTOR:

ACC (Advanced Computer Communications)
720 Santa Barbara Street
Santa Barbara, CA 93101

CONTACT:

Technical & Sales:
Gary Krall, (Gary@ACC.ARPA)
Program Manager, Government Systems
(805) 963-9431

ORDERING-PROCEDURE:

Vendor product, contact sales rep.

PROPRIETY-STATUS:

Proprietary product of ACC

INFORMATION-UPDATED:

January 1986

2.1.6. ACC-LH-DH/11

PRODUCT-OR-PACKAGE-NAME: LH-DH/11

DESCRIPTION:

The LH-DH/11 is a full-duplex Direct Memory Access (DMA) controller that attaches to a DEC PDP-11 or VAX Unibus and provides external communication according to BBN specification No. 1822 (available from BBN or the NIC). By means of interchange of plug-in circuits, the controller can be used for either local host (30' cable limit) or distant host (2000' cable limit) applications.

DOCUMENTATION:

Fully documented vendor product; descriptive literature available

CPU:

PDP-11, VAX

DISTRIBUTOR:

ACC (Advanced Computer Communications)
720 Santa Barbara Street
Santa Barbara, CA 93101

CONTACT:

Technical & Sales:
Gary Krall, (Gary@ACC.ARPA)
Program Manager, Government Systems
(805) 963-9431

ORDERING-PROCEDURE:

Vendor product, contact sales rep.

PROPRIETY-STATUS:

Proprietary product of ACC

INFORMATION-UPDATED:

January 1986

2.1.7. ACC-IF-11/HDH

PRODUCT-OR-PACKAGE-NAME: IF-11/HDH

DESCRIPTION:

This is a full-duplex DMA error checking communication unit which attaches a PDP-11 or VAX to a DDN IMP (HDH protocol).

DOCUMENTATION:

Fully documented vendor product, descriptive literature available

CPU:

PDP-11, VAX-11

O/S:

UNIX, UNIX 4.2 BSD, Ultrix, VMS (Supported by Wollongong, Internet), UNIX System V (supported by Uniq Digital Technologies)

DISTRIBUTOR:

ACC (Advanced Computer Communications)
720 Santa Barbara Street
Santa Barbara, CA 93101

CONTACT:

Technical & Sales:
Gary Krall, (Gary@ACC.ARPA)
Program Manager, Government Systems
(805) 963-9431

ORDERING-PROCEDURE:

Vendor product, contact sales rep.

PROPRIETY-STATUS:

Proprietary product of ACC

INFORMATION-UPDATED:

January 1986

2.1.8. ACC-IF-11Q/HDH

PRODUCT-OR-PACKAGE-NAME: IF-11Q/HDH

DESCRIPTION:

Full-duplex DMA controller used to attach a DEC LSI-11 to a DDN IMP (HDH protocol). If more than one IMP connection is required, optional XQ/HDH boards can be added.

DOCUMENTATION:

Fully documented vendor product; descriptive literature available

CPU:

PDP-11/03, PDP-11/23

DISTRIBUTOR:

ACC (Advanced Computer Communications)
720 Santa Barbara Street
Santa Barbara, CA 93101

CONTACT:

Technical & Sales:
Gary Krall, (Gary@ACC.ARPA)
Program Manager, Government Systems
(805) 963-9431

ORDERING-PROCEDURE:

Vendor product, contact sales rep.

PROPRIETY-STATUS:

Proprietary product of ACC

INFORMATION-UPDATED:

January 1986

2.1.9. ACC-M/1822

PRODUCT-OR-PACKAGE-NAME: M/1822

DESCRIPTION:

DMA controller used to attach a MULTIBUS system to a DDN IMP. Currently implemented on Sun and Pyramid Technologies workstations.

DOCUMENTATION:

Fully documented vendor product; descriptive literature available

CPU:

Sun Microsystems and Pyramid Technologies

O/S:

UNIX

DISTRIBUTOR:

ACC (Advanced Computer Communications)
720 Santa Barbara Street
Santa Barbara, CA 93101

CONTACT:

Technical & Sales:
Gary Krall, (Gary@ACC.ARPA)
Program Manager, Government Systems
(805) 963-9431

ORDERING-PROCEDURE:

Vendor product, contact sales rep.

PROPRIETY-STATUS:

Proprietary product of ACC

INFORMATION-UPDATED:

January 1986

2.1.10. ACC-ACP-625

PRODUCT-OR-PACKAGE-NAME: ACC-ACP-625

DESCRIPTION:

This is a full-duplex DMA communication interface which attaches a PDP-11 or VAX to a DDN IMP supporting Basic Mode X.25. The ACC implementation is in conformance at link level to FED-STD-1041, FIPS-PUB 100 and at packet level to DDN X.25 Host Interface Specification, December 1983. The product is supported by Wollongong and by Internet Systems. There are plans by Uniq Digital to support the product for PASSAGE.

DOCUMENTATION:

Fully documented vendor product; descriptive literature available

O/S:

UNIX 4.2 BSD, UNIX System V, VAX/VMS

CPU:

DEC PDP and VAX systems

DISTRIBUTOR:

ACC (Advanced Computer Communications)
720 Santa Barbara Street
Santa Barbara, CA 93101

CONTACT:

Technical & Sales:
Gary Krall, (Gary@ACC.ARPA)
Program Manager, Government Systems
(805) 963-9431

ORDERING-PROCEDURE:

Vendor product, contact sales rep.

PROPRIETY-STATUS:

Proprietary product of ACC

INFORMATION-UPDATED:

January 1986

2.1.11. ACC-V/1822

PRODUCT-OR-PACKAGE-NAME: V/1822

DESCRIPTION:

Attaches the VERSAbus to a DDN IMP.

DOCUMENTATION:

Descriptive literature available

DISTRIBUTOR:

ACC (Advanced Computer Communications)
720 Santa Barbara Street
Santa Barbara, CA 93101

CONTACT:

Technical & Sales:
Gary Krall, (Gary@ACC.ARPA)
Program Manager, Government Systems
(805) 963-9431

ORDERING-PROCEDURE:

Vendor product, contact sales rep.

PROPRIETY-STATUS:

Proprietary product of ACC

INFORMATION-UPDATED:

January 1986

2.1.12. ACC-ACP-6250

PRODUCT-OR-PACKAGE NAME: ACP-6250

DESCRIPTION:

This is a full-duplex DMA communication front-end, utilizing 68000 microprocessor technology, which attaches a VAX to a DDN IMP supporting Standard Mode X.25. The ACC implementation is in conformance at the link level to FED-STD-1041, FIPS-PUB 100 and at packet level to DDN X.25 Host Interface Specification, December 1983. The product will soon be supported by Wollongong and by Internet Systems.

DOCUMENTATION:

Fully documented vendor product, descriptive literature available.

CPU:

68000 for board, VAX for host

O/S:

UNIX 4.2 BSD, VAX/VMS

DISTRIBUTOR:

ACC (Advanced Computer Communications)
720 Santa Barbara Street
Santa Barbara, CA 93101

CONTACT:

Technical & Sales:
Gary Krall, (Gary@ACC.ARPA)
Program Manager, Government Systems
(805) 963-9431

ORDERING-PROCEDURE:

Vendor product, contact sales rep.

PROPRIETY-STATUS:

Proprietary product of ACC

INFORMATION-UPDATED:

January 1986

2.1.13. ACC-ACP-5250

PRODUCT-OR-PACKAGE NAME: ACP 5250

DESCRIPTION:

This is a full-duplex DMA communication front end, utilizing 68000 microprocessor technology, which attaches a microVAX to a DDN IMP supporting Standard Mode X.25. The ACC implementation is in conformance at link level to FED-STD-1041, FIPS PUB 100 and at packet level to DDN X.25 Host Interface Specification, Dec. 1983. The product will soon be supported by Wollongong and by Internet Systems.

DOCUMENTATION:

Fully documented vendor product, descriptive literature available.

CPU:

68000 for board and MicroVAX for host

O/S:

MicroVMS

DISTRIBUTOR:

ACC (Advanced Computer Communications)
720 Santa Barbara Street
Santa Barbara, CA 93101

CONTACT:

Technical & Sales:
Gary Krall, (Gary@ACC.ARPA)
Program Manager, Government Systems
(805) 963-9431

ORDERING-PROCEDURE:

Vendor product, contact sales rep.

PROPRIETY-STATUS:

Proprietary product of ACC

INFORMATION-UPDATED:

January 1986

2.2. Apollo

2.2.1. Apollo Ethernet Gateway

PRODUCT-OR-PACKAGE-NAME: Apollo Ethernet Gateway

DESCRIPTION:

This is an intelligent hardware controller which mounts in the server processor (DSP80A) or Multibus interfaces on other computational nodes. Includes cable, transceiver and full TCP/IP access protocol.

DOCUMENTATION:

TCP/IP Reference Manual

CPU:

Runs on Apollo DOMAIN systems (68020 based)

O/S:

UNIX 4.2 BSD, System V and AEGIS O/S

IMPLEMENTATION-LANGUAGE:

C

DISTRIBUTOR:

Apollo Computer, Inc.
4301 Great America Parkway
4th Floor
Santa Clara, CA 95054
(408) 496-2900

CONTACT:

Nearest Apollo Sales Office or (617) 256-6600

ORDERING-PROCEDURE:

Contact nearest Apollo Sales Office or (617) 256-6600

PROPRIETY-STATUS:

Public Domain

INFORMATION-UPDATED:

February 1986

2.3. Bolt Beranek and Newman

2.3.1. BBN-C/30

PRODUCT-OR-PACKAGE-NAME: BBN-C/30

DESCRIPTION:

The Terminal Access Controller (TAC) is a user Telnet host that supports the TCP/IP host-to-host protocols. It runs in a 64K C/30 computer. It supports up to 63 terminal ports, and connects to a network via an 1822 or HDH host interface. The TAC TCP/IP conforms with RFC791 and RFC793 specifications with the following exceptions:

- - IP options are accepted but ignored.
- - All TCP options except maximum segment size are not accepted.
- - Precedence, security, etc. are ignored. The TAC also supports Packet core, TAC Monitoring, Internet Control Message Protocol (ICMP), and a subset of the Gateway-Gateway protocols.

For more information on the TAC's design, see IEN-166. All major features have been implemented except Class B and C addressing, IP reassembly, and TCP Urgent handling. These will be done in the near future.

CONTACT:

Robert Dye, (RDye@BBN-UNIX.ARPA), (617) 497-2453

INFORMATION-UPDATED:

February 1986

2.4. Bridge Communications

2.4.1. Bridge CS/1

PRODUCT-OR-PACKAGE-NAME: The Communications Server 1 (CS/1)

DESCRIPTION:

Bridge's CS/1 server with TCP/IP software performs the function of a terminal or host server, allowing up to 32 asynchronous devices (e.g., terminals, printers, computers) to access host computers that support TCP/IP and are attached to an Ethernet LAN. The CS/1 also supports the User Datagram Protocol (UDP) and the Ethernet Address Resolution Protocol (ARP). Bridge Communications also offers gateway servers which interface the CS/1 to broadband networks and the IBM SDLC world.

IMPLEMENTATION-LANGUAGE:

C

DISTRIBUTOR:

Bridge Communications, Inc.
2801 Stierlin Road
Mountain View, CA 94043

CONTACT:

Douglas W. Tsui, (415) 969-4400

PROPRIETY-STATUS:

Product of Bridge Communications, Inc.

INFORMATION-UPDATED:

February 1986

2.4.2. Bridge CS/100

PRODUCT-OR-PACKAGE-NAME: The Communications Server 100 (CS/100)

DESCRIPTION:

Bridge's CS/100 server with TCP/IP software performs the function of a terminal or host server, allowing up to 14 asynchronous devices (e.g., terminals, printers, computers) to access host computers that support TCP/IP and are attached to an Ethernet LAN. The CS/100 also supports the User Datagram Protocol (UDP) and the Ethernet Address Resolution Protocol (ARP). Bridge Communications also offers gateway servers which interface the CS/100 to broadband networks and the IBM SDLC world.

IMPLEMENTATION - LANGUAGE:

C

DISTRIBUTOR:

Bridge Communications, Inc.
2801 Stierlin Road
Mountain View, CA 94043

CONTACT:

Douglas W. Tsui, (415) 969-4400

PROPRIETY-STATUS:

Product of Bridge Communications, Inc.

INFORMATION-UPDATED:

February 1986

2.4.3. Bridge GS/3

PRODUCT-OR-PACKAGE-NAME: The Gateway Server 3 (GS/3)

DESCRIPTION:

Bridge's GS/3 server with TCP/IP software interconnects physically isolated Ethernet segments over multiple point to-point communication links. It supports up to four synchronous communications lines with data rates up to 64K bps each. As an internetwork router, the GS/3 uses the Internet Protocol (IP) to route packets across networks. It is compatible with Bridge's comprehensive TCP/IP line ofcommunications, gateway, and network control servers.

IMPLEMENTATION-LANGUAGE:

C

DISTRIBUTOR:

Bridge Communications, Inc.
2801 Stierlin Road
Mountain View, CA 94043

CONTACT:

Douglas W. Tsui, (415) 969-4400

PROPRIETY-STATUS:

Product of Bridge Communications, Inc.

INFORMATION-UPDATED:

February 1986

2.4.4. Bridge GS/6

PRODUCT-OR-PACKAGE-NAME: The Gateway Server 6 (GS/6)

DESCRIPTION:

Bridge's GS/6 server with TCP/IP software interconnects an Ethernet segment to the broadband backbone trunk. As many as 255 Ethernet TCP/IP networks can be supported over a single 6 Mhz broadband channel using GS/6s Carrier Sense Multiple Access (CSMA) mechanism. As an internetwork router, the GS/6 uses the Internet Protocol (IP) to route packets across networks. It is compatible with Bridge's comprehensive TCP/IP line of communications, gateway, and network control servers.

IMPLEMENTATION-LANGUAGE:

C

DISTRIBUTOR:

Bridge Communications, Inc.
2801 Stierlin Road
Mountain View, CA 94043

CONTACT:

Douglas W. Tsui, (415) 969-4400

PROPRIETY-STATUS:

Product of Bridge Communications, Inc.

INFORMATION-UPDATED:

February 1986

2.4.5. Bridge CS/1-SNA

PRODUCT-OR-PACKAGE-NAME: The Communications Server 1-SNA (CS/1-SNA)

DESCRIPTION:

Bridge's CS/1-SNA server with TCP/IP software supports one synchronous SDLC port to an IBM communications controller with a maximum of 24 LU-to-LU sessions. It provides a connection service between a wide variety of non-IBM terminals, workstations, and an IBM host running Systems Network Architecture (SNA) protocol. The CS/1-SNA is compatible with Bridge's comprehensive TCP/IP line of communications, gateway, and network control servers.

IMPLEMENTATION-LANGUAGE:

C

DISTRIBUTOR:

Bridge Communications, Inc.
2801 Stierlin Road
Mountain View, CA 94043

CONTACT:

Douglas W. Tsui, (415) 969-4400

PROPRIETY-STATUS:

Product of Bridge Communications, Inc.

INFORMATION-UPDATED:

February 1986

2.4.6. Bridge NCS/150

PRODUCT-OR-PACKAGE-NAME: The Network Control Server 150 (NCS/150)

DESCRIPTION:

Bridge's NCS/150 server with TCP/IP software provides a complete continuous record of all network activity at the session level. It is a network management server that allows configuration control, monitoring, bootloading, and centralized control of local area network resources. The NCS/150 is designed to support up to 40 Bridge Communications Servers on a single network or multiple networks interconnected by Gateway Servers.

IMPLEMENTATION-LANGUAGE:

C

DISTRIBUTOR:

Bridge Communications, Inc.
2801 Stierlin Road
Mountain View, CA 94043

CONTACT:

Douglas W. Tsui, (415) 969-4400

PROPRIETY-STATUS:

Product of Bridge Communications, Inc.

INFORMATION-UPDATED:

February 1986

2.5. Communication Machinery Corporation

2.5.1. CMC-3200

PRODUCT-OR-PACKAGE-NAME: DRN-3200 CMC TCP/IP Ethernet - DDN Gateway

DESCRIPTION:

A TCP/IP implementation on CMC's DRN 3200 DDN/Ethernet Gateway, which is a stand-alone device transferring messages between the two networks. Includes: IP, ICMP, and EGP

DOCUMENTATION:

DRN 3200 System Operations Manual

CPU:

Standalone

O/S:

Proprietary

IMPLEMENTATION LANGUAGE:

C

DISTRIBUTOR:

Communication Machinery Corporation
1421 State St.
Santa Barbara, CA 93101

CONTACT:

Russ Sharer
(805) 963-9471

ORDERING PROCEDURE:

Contact CMC Marketing

PROPRIETY STATUS:

CMC Proprietary

INFORMATION-UPDATED:

November 1985

2.5.2. CMC Gateway

PRODUCT-OR-PACKAGE-NAME: CMC TCP/IP Ethernet/DDN Gateway Software

DESCRIPTION:

An implementation of TCP/IP for UNIX System V and 4.2 BSD systems with CMC's DDN - Ethernet Node Processor for MULTIBUS. The EGP, TCP, IP, ICMP and UDP protocols run on the Node Processor, allowing users access to either the DDN or an Ethernet. The Node Processor can additionally act as a gateway between the two networks. Applications, which run in the host UNIX system, include TELNET, FTP, TFTP and SMTP.

DOCUMENTATION:

System calls as documented in 4.2 BSD documentation.

Also from CMC:

Internet User's Guide

Internet Programmer's Guide

Internet Systems Manager Guide

CPU:

VMEbus

ENP-40 for UNIBUS

ENP-50 for Qbus

ENP-30 for MULTIBUS

ENP-60 for IBM PC/AT

O/S:

UNIX System V, UNIX 4.2 BSD

IMPLEMENTATION LANGUAGE:

C

DISTRIBUTOR:

Communication Machinery Corporation
1421 State St.
Santa Barbara, CA 93101

CONTACT:

Russ Sharer
(805) 963-9471

ORDERING PROCEDURE:

Contact CMC Marketing

PROPRIETY STATUS:

CMC Proprietary

INFORMATION-UPDATED:

November 1985

2.5.3. CMC-QM10

PRODUCT-OR-PACKAGE-NAME: QM10 Advanced Communication Processor

DESCRIPTION:

The QM10 is an LSI device supporting virtual circuit and packet level functions, using TCP, IP, and ICMP. It is a 40 pin DIP device with a piggyback ROM for protocols. It supports a single virtual circuit, using shared RAM memory for software interfacing.

DOCUMENTATION:

QM10 Application note

QM10 Programmming guide

CPU:

6502 microprocessor

O/S:

Any

IMPLEMENTATION LANGUAGE:

C

DISTRIBUTOR:

Communication Machinery Corporation
1421 State St.
Santa Barbara, CA 93101

CONTACT:

Russ Sharer
(805) 963-9471

ORDERING PROCEDURE:

Contact CMC Marketing

PROPRIETY STATUS:

CMC Proprietary

INFORMATION-UPDATED:

November 1985

2.6. Encore

2.6.1. Annex-UX

PRODUCT-OR-PACKAGE-NAME: Annex-UX

DESCRIPTION:

The Annex-UX is a terminal server for Ethernet that uses TCP/IP. It has 16 asynchronous serial ports and one parallel printer port. Each serial port can support an auto-answer modem. Both rlogin and telnet protocols are supported, and each port can have up to three virtual terminal connections. The IP implementation interprets both ICMP redirects and 4.2 route daemon messsages.

The Annex-UX has been successfully tested with 4.2 and 4.3bsd Unix. Planned enhancements during 1986 include IP subnet support, security features, and a editing front end capable of offloading standard Unix machines by handling simple editing operations within the Annex-UX.

DOCUMENTATION:

A two manual set is shipped with each Annex-UX. It consists of a Hardware Installation Guide and a Users Guide. A Network Administrators Guide is available for a nominal charge.

CPU:

National Semiconductor 32016

O/S:

Proprietary

IMPLEMENTATION-LANGUAGE:

C

DISTRIBUTOR:

Call for local distributor

CONTACT:

Rich D'Angelo
Encore Computer Corporation
257 Cedar Hill Street
Marlboro, MA 01752
(617) 460-0500

ORDERING-PROCEDURE:

Contact factory

PROPRIETY-STATUS:

Proprietary

INFORMATION-UPDATED:

February 1986

2.7. Excelan

2.7.1. Excelan EXOS-200

PRODUCT-OR-PACKAGE-NAME: EXOS 200 Series Intelligent Ethernet Controller

DESCRIPTION:

The EXOS 200 Series includes boards for Multibus, VME, Q-bus, UNIBUS, IBM-PC/XT/AT (and compatibles). The design is modular, and can be readily adapted to other host bus designs. Each is a single-board front-end processor which includes an 80186 CPU, at least 256 Kbytes RAM, and an Ethernet Data Link controller. In addition, a DMA-backed SBX bus connector allows additional communications links to be supported via off-the-shelf daughter boards. An EPROM-based operating system kernel manages EXOS resources, and provides a standard high-level programming environment for protocol code. All boards can run the same object code, and are 100% software compatible with other Excelan products. TCP/IP protocol code, available separately from Excelan, can be downloaded to EXOS RAM at start-up time either by the host system, or over the Ethernet.

DOCUMENTATION:

Available from Excelan

CPU:

Any

O/S:

Any

DISTRIBUTOR:

Excelan
2180 Fortune Drive
San Jose, CA 95131

CONTACT:

Sales: Donna Keeling, (408) 434-2300

Technical: Andrea Salzman, (408) 434-2300

ORDERING-PROCEDURE:

Contact Excelan

PROPRIETY-STATUS:

Excelan Product

INFORMATION-UPDATED:

January 1986

2.8. Imagen

2.8.1. Imprint-10

PRODUCT NAME: IMPRINT-10 TCP/IP Ethernet Printer

DESCRIPTION:

The IMPRINT-10 is an intelligent laser printer, based on a 10 page-per-minute, reliable printing engine, providing the page-layout language Impress, line-printer emulation, daisy-wheel printer emulation, and Tektronix 4014 emulation. The IMPRINT-10 is supported by the Scribe, TeX, troff, and ditroff document production systems. Supports a full, one-connection TCP and IP, along with ICMP and HARP.

DOCUMENTATION:

Available from vendor

CPU:

68000, multibus-based, proprietary hardware

O/S:

Proprietary, not user-programmable

IMPLEMENTATION-LANGUAGE:

C

DISTRIBUTOR:

Imagen Corporation
2660 Marine Way
Mountain View, California 94043

CONTACT:

Sales: David Perlmutter
Technical: Geoffrey H. Cooper
(415) 960-0714

ORDERING-PROCEDURE:

Contact vendor for more information

PROPRIETY-STATUS:

Proprietary product

2.9. MICOM-Interlan

2.9.1. MICOM-Interlan TCP/IP

PRODUCT-OR-PACKAGE-NAME: MICOM-Interlan TCP/IP

DESCRIPTION:

This is a DoD TCP/IP implementation compatible the with 4.2 BSD TCP/IP implementation. Currently, a DEC VMS and MICRO VMS implementation is available. Other versions will be announced soon. This TCP/IP runs on the intellingent NP-series protocol/processors.

DOCUMENTATION:

Library calls, installation, guide to diagnostics, device drivers documentation and utilities are included.

CPU:

DEC VAX family and MicroVax II. Others will be announced in the near future.

O/S:

VMS and MicroVMS

IMPLEMENTATION-LANGUAGE:

C-callable library. TCP/IP image in on-board.

DISTRIBUTOR:

MICOM-Interlan
155 Swanson Road
Boxboro MA 01719

CONTACT:

B. R. Finer, Product Manager, (617) 263-9929 or LAN Marketing/Sales at 1-800-LAN-TALK.

ORDERING-PROCEDURE:

Contact LAN Marketing/Sales for the nearest office on 1-800-LAN-TALK

PROPRIETY-STATUS:

MICOM-Interlan

INFORMATION-UPDATED:

January 1986

2.9.2. MICOM-Interlan NP-series Protocol Processors

PRODUCT-OR-PACKAGE-NAME: MICOM-Interlan NP-series Protocol Processors

DESCRIPTION:

Intelligent Ethernet interface boards that support both on-board (layers 1-4) and link-level protocol implementations.

DOCUMENTATION:

Diagnostics, installation, and user's manuals are included.

CPU:

DEC UNIBUS-based systems (NP100), DEC Q-bus based systems (NP200), MULTIBUS-based systems (NP300) and IBM PC/AT based systems (NP600).

O/S:

Based on buses as described above, including VMS, MicroVMS, and MS DOS.

DISTRIBUTOR:

MICOM-Interlan
155 Swanson Road
Boxboro, MA 01719

CONTACT:

B. R. Finer, Product Manager, (617) 263-9929 or LAN Marketing/Sales at 1-800-LAN-TALK.

ORDERING-PROCEDURE:

Contact LAN Marketing/Sales for nearest sales office at 1-800-LAN-TALK.

PROPRIETY-STATUS:

MICOM-Interlan

INFORMATION-UPDATED:

January 1986

2.9.3. MICOM-Interlan-NI1010A

PRODUCT-OR-PACKAGE-NAME: MICOM-Interlan NI1010A

DESCRIPTION:

Link level Ethernet Controller board for Digital Equipment UNIBUS-based systems.

DOCUMENTATION:

User manual, installation instructions and diagnostics are included.

CPU:

UNIBUS-based systems such as VAX-11 and PDP-11

O/S:

TCP/IP software is available from various vendors (Including Wollongong and with UNIX 4.2 BSD).

DISTRIBUTOR:

MICOM-Interlan
155 Swanson Road
Boxboro, MA 01719

CONTACT:

B. R. Finer, Product Manager, (617) 263-9929 or LAN Marketing/Sales at 1-800-LAN-TALK.

ORDERING-PROCEDURE:

Contact LAN Marketing/Sales fro nearest sales office on 1-800-LAN-TALK

PROPRIETY-STATUS:

MICOM-Interlan

INFORMATION-UPDATED:

January 1986

2.9.4. MICOM-Interlan NI5010A

PRODUCT-OR-PACKAGE-NAME: MICOM-Interlan NI5010A

DESCRIPTION:

Link level Ethernet Controller board for IBM PC buses or equivalent.

DOCUMENTATION:

User's manual, installation instructions and diagnostics are included.

CPU:

IBM PC/XT/AT or compatibles

O/S:

TCP/IP software is available from various vendors (MIT PC/IP) for this product.

DISTRIBUTOR:

MICOM-Interlan
155 Swanson Road
Boxboro, MA 01719

CONTACT:

B. R. Finer, Product Manager, (617) 263-9929 or LAN Marketing/Sales at 1-800-LAN-TALK.

ORDERING-PROCEDURE:

Contact LAN Marketing/Sales for nearest sales office on 1-800-LAN-TALK.

PROPRIETY-STATUS:

MICOM-Interlan

INFORMATION-UPDATED:

January 1986

2.10. MITRE

2.10.1. MITRE NAC

PRODUCT-OR-PACKAGE-NAME: Mitre Network Access Component

DESCRIPTION:

This is Mitre's second generation network controller (see ZILOG-Z8000). Using an expanded hardware base, industry standard backplanes and multiple microprocessor boards, Mitre has built a MCS-68000-based network access component. This network component has both MULTIBUS and VERSABUS form factors and broadband, Ethernet and 1822 network interfaces.

The standard MULTIBUS network component contains an OMNIBYTE-dual-ported 68000, with 128K bytes dynamic RAM, and 96K bytes EPROM, a memory board, and a Bridge serial i/o (SIO) interface board. The SIO board has its own 68000 cpu, 8 serial ports, 4K bytes RAM and 32K bytes ROM. The long-haul network version contains an ACC MULTIBUS-1822 interface. The VERSABUS version supports an ACC VERSABUS-1822 interface. In addition, the VERSABUS version supports an ACC VERSABUS-UNIBUS interface for host-interfacing to DEC machines.

The software is written in 'C' and runs under CMOS, a 'C' version of SRI's Micro Operating System. In addition to supporting TCP, IP, ICMP, and the appropriate network level protocol, the network front-end version (aka a host interface unit for the LAN environment) supports both the DTI-Host-to-Front-End Protocol and a Mitre Network Access Protocol.

DOCUMENTATION:

Some Mitre Technical Reports

CPU:

MCS-68000

O/S:

CMOS

IMPLEMENTATION-LANGUAGE:

C

DISTRIBUTOR:

The Mitre Corporation
McLean, VA 22102

CONTACT:

Manette Charny, (charny@mitre-gw), (703) 883-6728

PROPRIETY-STATUS:

Public domain

INFORMATION-UPDATED:

January 1986

2.10.2. Mitre Z8000

PRODUCT-OR-PACKAGE-NAME: MITRE Zilog Z8000

DESCRIPTION:

This network controller is the product of a series of Mitre projects aimed at making network access (both local and long-haul) as straightforward as computer peripheral access. Some of the new microprocessors make it possible to construct a "network controller" that handles the particulars of packet ordering and flow control in the same way that hardware controllers handle the particulars of disk cylinder centerline or an end of tap sensor. This TCP/IP network controller, supported by a Z8000 microprocessor box, is currently interfaced to a number of UNIX systems via a UMC-Z80. The outboard box is accessed by a set of I/O-like management calls (open, close, read, write, and special) which transport TCP requests via a network access protocol.

The outboard box has 64K bytes of Ram, 32 bytes of Rom, a Z8002 micro, and a serial Usart (880K BPS max.) All of the software was written in C using an in-house version of the portable C compiler. The unit interfaces as easily to a local network as it does to the DDN. All that is necessary for this conversion is the addition of an ACC-1822 hardware device and a new device driver. Other than different round trip delays, host user-level software sees no difference between the two network devices. The resulting set of Z8000-based building blocks supports host interface unit and a terminal concentrator on the local net.

Performance with TCP/IP has been measured with two user processes talking via TCP/IP over the cable at 350K BPS. Rates as high as 450K BPS occur when user I/O buffer sizes are set at 8K bytes per I/O. The Internet Protocol contains the lowest level of addressing. This allows for local units to be addressed in the same way remote units, two or three networks away, are addressed. The effect of 300 bit TCP/IP headers has negligible impact on performance.

DOCUMENTATION:

Some Mitre Technical Reports

O/S:

CMOS

IMPLEMENTATION-LANGUAGE:

C

DISTRIBUTOR:

The Mitre Corporation
McLean, VA 22102

CONTACT:

John Mullen, (jrm@MITRE.ARPA), (703) 827-7476

PROPRIETY-STATUS:

Public domain

2.11. SCOPE

2.11.1. Scope DDN MicroGateway

PRODUCT-OR-PACKAGE NAME: DDN MicroGateway

DESCRIPTION:

The DDN MICROGATEWAY is a single board product which implements the MIL Standard TCP/IP as well as ICMP and lower layer link and network protocols - either FIPS 100/X.25 or 1822/HDH.

Using a Motorola 68008 microprocessor, the DDN MICROGATEWAY provides full-service host support at 56K bits per second, and it will accommodate up to 64 TCP/IP sessions with its shared memory interface.

A companion DDN MICROGATEWAY software product support host TELNET, FTP, and SMTP applications, thus offering a total turn-key solution for certain UNIX operating system enviornments.

DOCUMENTATION:

A user's manual describes product design and provides information on how to integrate the DDN MICROGATEWAY into the user's host hardware and operating system environment.

CPU:

Single board implementations for MULTIBUS and IBM-PC Bus. Other buses planned.

O/S:

Board product is not O/S specific. ULPs are based on UNIX 4.2 BSD or UNIX System V. Other O/S's are available.

IMPLEMENTATION-LANGUAGE:

TCP/IP, X.25 are in C firmware, embedded in the hardware product. ULPs are in C.

DISTRIBUTOR:

SCOPE Incorporated
1860 Michael Faraday Drive
Reston, Virginia 22090
(703) 471-5600

CONTACT:

Sue Gruszewski

ORDERING PRODCEDURE:

See above contact

PROPRIETARY-STATUS:

Commercially available

2.12. Spartacus

2.12.1. K200

PRODUCT-OR-PACKAGE-NAME: K200

DESCRIPTION:

Ethernet Controller providing a high-speed interface between an IBM 370, 30xx or PCM and the Ethernet local-area network. The K200 is a microprocessor driven control unit that attaches to IBM's block multiplexer channel using standard IBM bus and tag cables. K200 implements the physical and data link layers of the ISO/OSI Reference Model for network architecture and conforms to the specifications for Ethernet, version 1.0. Maximum throughput is in excess of 2.5 megabits per second.

DOCUMENTATION:

Available from vendor

CPU:

IBM 370, IBM 30xx, PCM

DISTRIBUTOR:

Spartacus, Inc.
One Lowell Research Center
847 Rogers Street
Lowell, MA 01852

CONTACT:

Christine Nelms, (617) 937-1600 or 800-LAN-KNET

PROPRIETY-STATUS:

Spartacus product

INFORMATION-UPDATED:

February 1986

2.13. System Development Corporation

2.13.1. SDC CP8001

PRODUCT-OR-PACKAGE-NAME: SDC MIL/INT LAN Network Front End (CP8001)

DESCRIPTION:

The MIL/INT product line includes network front ends, terminal concentrators, and gateways implementing DoD protocols for both DDN and broadband LANs. The LAN NFE provides access to a broadband LAN for a host computer implementing the DoD Host to Front End Protocol (HFP). The NFE implements HFP, TCP, IP, ICMP, and the LAN access protocol. Connection to the host is via HFP with X.25 LAPB at speeds up to 600 Kbps. The host must implement HFP and any application protocols desired (Telnet, FTP, SMTP). The LAN interface is a proprietary CSMA/CD network access protocol on industry standard broadband cable (CATV) systems. The data rate on each channel of the LAN is 2 Mbps.

DOCUMENTATION:

Product Specification, Installation Manual, and User Manual

CPU:

Multiple Intel 8086 microprocessors

O/S:

Proprietary realtime OS86 based on secure kernel technology

IMPLEMENTATION LANGUAGE:

C

DISTRIBUTOR:

System Development Corporation
2525 Colorado Ave
Santa Monica, CA 90406

CONTACT:

Technical: Carl Sunshine, (213) 453-5161

Sales: Brad Anderson, (805) 987-9472

INFORMATION-UPDATED:

February 1986

2.13.2. SDC CP8040

PRODUCT-OR-PACKAGE-NAME: SDC MIL/INT LAN Terminal Concentrator (CP8040)

DESCRIPTION:

The MIL/INT product line includes network front ends, terminal concentrators, and gateways implementing DoD protocols for both DDN and broadband LANs. The LAN TC provides access to a LAN for up to eight asynchronous terminals operating at speeds up to 19.2 Kbps. The TC may also be configured as a Terminal Emulation Processor (TEP) to attach asynchronous ports on a host to the network. The LAN operates using a proprietary CSMA/CD network access protocol on industry standard broadband cable (CATV) systems. The data rate on each channel of the LAN is 2 Mbps. The TC also implements Telnet, TCP, IP, and ICMP, to support terminal communication with other DoD compatible devices.

DOCUMENTATION:

Product Specification, Installation Manual, and User Manual

CPU:

Multiple Intel 8086 microprocessors

O/S:

Proprietary realtime OS86 based on secure kernel technology

IMPLEMENTATION LANGUAGE:

C

DISTRIBUTOR:

System Development Corporation
2525 Colorado Ave
Santa Monica, CA 90406

CONTACT:

Technical: Carl Sunshine, (213) 453-5161

Sales: Brad Anderson, (805) 987-9472

INFORMATION-UPDATED:

February 1986

2.13.3. SDC CP8050

PRODUCT-OR-PACKAGEENAME: SDC MIL/INT LAN Terminal Bus Interface Unit (CP8050)

DESCRIPTION:

The MIL/INT product line includes network front ends, terminal concentrators, and gateways implementing DoD protocols for both DDN and broadband LANs. The Terminal BIU provides a compact, low cost LAN interface for two asynchronous terminals via two RS-232 ports operating at speeds up to 19.2 Kbps. The BIU implements a proprietary CSMA/CD network access protocol on industry standard broadband cable (CATV) systems. The data rate on each channel of the LAN is 2 Mbps. The BIU also implements Telnet, TCP, IP, and ICMP, to support terminal communication with other DoD compatible devices.

DOCUMENTATION:

Product Specification, Installation Manual, and User Manual

CPU:

Intel 8086 microprocessor

O/S:

Proprietary realtime OS86 based on secure kernel technology

IMPLEMENTATION LANGUAGE:

C

DISTRIBUTOR:

System Development Corporation
2525 Colorado Ave
Santa Monica, CA 90406

CONTACT:

Technical: Carl Sunshine, (213) 453-5161

Sales: Brad Anderson, (805) 987-9472

INFORMATION-UPDATED:

February 1986

2.13.4. SDC DDN Gateway

PRODUCT-OR-PACKAGE-NAME: SDC MIL/INT Long Haul Network Gateway (CP8060)

DESCRIPTION:

The MIL/INT product line includes network front ends, terminal concentrators, and gateways implementing DoD protocols for both DDN and broadband LANs. The Long Haul Network Gateway interconnects the long haul backbone network of DDN (or any network based on IMP type switches) with a broadband LAN. Dynamic routing is supported using both an internal Gateway-to-Gateway (GGP) protocol with other LAN gateways in the local system, and the DoD External Gateway Protocol (EGP) with the core DDN system. IP, ICMP, and network access protocols are also supported. The LAN employs a proprietary CSMA/CD network access protocol on industry standard broadband cable (CATV) systems. The data rate on each channel of the LAN is 2 Mbps. DDN access may be either local or remote (via modems) using either X.25 or HDH protocols at speeds up to 56 Kbps. The MIL/INT DDN TC has been certified by DCA for DDN access.

DOCUMENTATION:

Product Specification, Installation Manual, and User Manual

CPU:

Multiple Intel 8086 microprocessors

O/S:

Proprietary realtime OS86 based on secure kernel technology

IMPLEMENTATION LANGUAGE:

C

DISTRIBUTOR:

System Development Corporation
2525 Colorado Ave
Santa Monica, CA 90406

CONTACT:

Technical: Carl Sunshine, (213) 453-5161

Sales: Brad Anderson, (805) 987-9472

INFORMATION-UPDATED:

February 1986

2.13.5. SDC LAN Gateway

PRODUCT-OR-PACKAGE-NAME: SDC MIL/INT LAN Interchannel Gateway (CP8080)

DESCRIPTION:

The MIL/INT product line includes network front ends, terminal concentrators, and gateways implementing DoD protocols for both DDN and broadband LANs. The Interchannel Gateway interconnects LAN channels on the same or different cable plants. IP, ICMP, Gateway-to-Gateway (GGP), and LAN access protocols are supported. The LAN employs a proprietary CSMA/CD network access protocol on industry standard broadband cable (CATV) systems. The data rate on each channel of the LAN is 2 Mbps.

DOCUMENTATION:

Product Specification, Installation Manual, and User Manual

CPU:

Multiple Intel 8086 microprocessors

O/S:

Proprietary realtime OS86 based on secure kernel technology

IMPLEMENTATION LANGUAGE:

C

DISTRIBUTOR:

System Development Corporation
2525 Colorado Ave
Santa Monica, CA 90406

CONTACT:

Technical: Carl Sunshine, (213) 453-5161

Sales: Brad Anderson, (805) 987-9472

INFORMATION-UPDATED:

February 1986

2.13.6. SDC CP8201

PRODUCT-OR-PACKAGE-NAME: SDC MIL/INT Long Haul Network Front End (CP8201)

DESCRIPTION:

The MIL/INT product line includes network front ends, terminal concentrators, and gateways implementing DoD protocols for both DDN and broadband LANs. The Long Haul NFE provides access to the long haul backbone of the DDN (or any network based on IMP type switches) for a host computer implementing the DoD Host to Front End Protocol (HFP). The NFE implements HFP, TCP, IP, ICMP, and the long haul DDN network access protocols (X.25 or HDH). Connection to the host is via HFP with X.25 LAPB at speeds up to 600 Kbps. The host must implement HFP and any application protocols desired (Telnet, FTP, SMTP). IMP connections may be local or remote (via modems) at speeds up to 56 Kbps. The MIL/INT DDN NFE has been certified by DCA for DDN access.

DOCUMENTATION:

Product Specification, Installation Manual, and User Manual

CPU:

Multiple Intel 8086 microprocessors

O/S:

Proprietary realtime OS86 based on secure kernel technology

IMPLEMENTATION LANGUAGE:

C

DISTRIBUTOR:

System Development Corporation
2525 Colorado Ave
Santa Monica, CA 90406

CONTACT:

Technical: Carl Sunshine, (213) 453-5161

Sales: Brad Anderson, (805) 987-9472

INFORMATION-UPDATED:

February 1986

2.13.7. SDC CP8240

PRODUCT-OR-PACKAGE-NAME: SDC MIL/INT Long Haul Network Terminal Concentrator (CP8240)

DESCRIPTION:

The MIL/INT product line includes network front ends, terminal concentrators, and gateways implementing DoD protocols for both DDN and broadband LANs. The Long Haul Network TC provides access to the long haul backbone of DDN (or any network based on IMP type switches) for up to eight asynchronous terminals operating at speeds up to 19.2 Kbps. The TC may also be configured as a Terminal Emulation Processor (TEP) to attach asynchronous ports on a host to the network. The TC implements Telnet, TCP, IP, ICMP, and the DDN network access protocols (X.25 or HDH). IMP connections may be local or remote (via modems) at speeds up to 56 Kbps. The MIL/INT DDN TC has been certified by DCA for DDN access.

DOCUMENTATION:

Product Specification, Installation Manual, and User Manual

CPU:

Multiple Intel 8086 microprocessors

O/S:

Proprietary realtime OS86 based on secure kernel technology

IMPLEMENTATION LANGUAGE:

C

DISTRIBUTOR:

System Development Corporation
2525 Colorado Ave
Santa Monica, CA 90406

CONTACT:

Technical: Carl Sunshine, (213) 453-5161

Sales: Brad Anderson, (805) 987-9472

INFORMATION-UPDATED:

February 1986

2.14. Tektronix

2.14.1. Tektronix 6130 Workstation

PRODUCT-OR-PACKAGE-NAME: 6130 Intelligent Graphics Workstation

DESCRIPTION:

The Tektronix Model 6130 is a UNIX 4.2 BSD & System V based workstation that has a 32-bit processor, 1 megabyte of parity memory (with 16 MB virtual addressability), 20 megabyte winchester (expandable to 40 or 80 MB), dual RS-232-C interfaces, Local Area Network (LAN) interface and ethernet TCP/IP with Distributed File System (DFS) software and a General Purpose Interface Bus (GPIB) all standard. The system can be expanded with additional disks, interfaces, streamer tape drives and software products.

The 6130 uses the ethernet standard (IEEE 803.2) with Transmission Control Protocol/Internet Protocol (TCP/IP) which handles the communications between a users program and other processes executing on the same workstation, at a different workstation on the LAN, or on a different network. The 6130 supports the File Transfer Protocol (FTP), the Simple Mail Transfer Protocol (SMTP) and the Virtual Terminal (Telnet). Tektronix has implemented a Distributed File System that allows a workstation to access files on other workstations as though they were resident locally. The 6130 can support up to 14 RS-232 terminals although 2 or 3 users per system is recommended.

DOCUMENTATION:

The documentation set that is included with the 6130 consists of ten well written manuals which cover system installation, operations, system administration, and extensive reference material. Over 40 other manuals are available which describe the language compilers, statistical software, spreadsheet programs, and other software and enhancement products.

CPU:

The 6130 uses the National Semiconductor 32000 Family of processors. The CPU is the NS 32016 with the NS 32081 Floating Point Unit.

O/S:

UTek, Tektronix UNIX-based (System V and 4.2 BSD)

IMPLEMENTATION-LANGUAGE:

C Language

DISTRIBUTOR:

Tektronix Inc.

CONTACT:

Local Sales Office or:

Mark Mehall, (503) 685-2275
Tektronix Inc.
P.O. Box 1000 60-770
Wilsonville, Oregon 97070
uucp: {ucbvax,decvax,ihnp4}!tektronix!orca!markm
CSnet: orca!markm@tek
ARPAnet: orca!markm.tek@csnet-relay
WU Telex: 151754
TWX: 910-467-8707
ITT Telex: 4742109
FAX: (503) 682-3408 GRP III, II Auto

ORDERING-PROCEDURE:

Contact the Local Tektronix Office.

PROPRIETY-STATUS:

UTek and the Distributed File System are proprietary products.

INFORMATION-UPDATED:

February 1986

2.15. Wollongong Group

2.15.1. Wollongong DDN Host Access Board

PRODUCT-OR-PACKAGE-NAME: WIN/VX (DDN)

DESCRIPTION:

This is a complete hardware/software TCP/IP implementation which allows any VAX/VMS host to connect to the DDN. Includes Telnet (remote login), FTP (file transfer), SMTP (Mail) Netstat, Finger, TFTP.

Supports the following network interfaces:

- ACC HDH (1822-J)
- ACC X.25

DOCUMENTATION:

Installation Guide and User Manual provided

CPU:

DEC VAX-11

O/S:

VMS 3.1 or greater and VMS 4.x

IMPLEMENTATION LANGUAGE:

C

DISTRIBUTOR:

The Wollongong Group
1129 San Antonio Road
Palo Alto, CA 94303

CONTACT:

Wollongong Sales
(415) 962-7200

ORDERING PROCEDURE:

Available with support from The Wollongong Group

PROPRIETY STATUS:

Wollongong

INFORMATION-UPDATED:

January 1986

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TCP/IP Implementations and Vendors Guide

February 1986

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SRI International
333 Ravenswood Avenue
Menlo Park, CA 94025
Attn: Ole J Jacobsen - EJ276

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DOCUMENTATION:

CPU:

O/S:

IMPLEMENTATION-LANGUAGE:

DISTRIBUTOR:

CONTACT:

ORDERING-PROCEDURE:

PROPRIETY-STATUS:

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