Software Product Description

PRODUCT NAME: **Digital TCP/IP Services for OpenVMS V4.0** **SPD 46.46.04**

DESCRIPTION

The Digital TCP/IP Services for OpenVMS product is a layered software product that provides interoperability and resource sharing between OpenVMS systems, UNIX® systems, and other systems that support the TCP/IP Protocol Suite and Sun® Microsystems' NFS™.

The Digital TCP/IP Services for OpenVMS (TCP/IP) product provides network file access, remote terminal access, remote command execution, remote printing, mail, and application development.

A lower cost version of the Digital TCP/IP Services for OpenVMS product, identified as a client, is available for users who do not require the full complement of features available in the Digital TCP/IP Services for OpenVMS product. The client license includes all of the functionality of the server license with the exception that the following server components are not included when the client license is purchased: NFS Server, BIND Server, PC-NFS Server, and the remote BOOT Server.

Customers requiring any of those server functions should purchase the server license. A Digital TCP/IP Client Upgrade license is also available in case the full product is required after initial purchase of a client-only license.

NEW FEATURES

IP/Multicasting

Allows users to participate in multicast messaging, including the use of the multicast backbone of the Internet. Saves bandwidth by limiting the number of messages that must be sent.

Dynamic Load Balancing–DNS based

Ensures the work load is evenly distributed across all hosts in a cluster, ensuring optimum response times for users.

RLOGIN Proxy

Provides proxy access to systems so that a host_name:user_name combination can attach directly to a target system without going through user_name:password interaction when the connection is established.

RCP–Remote Copy Procedure

Allows users to remotely copy files from any system in a network to any other system in the network as though the files were local files.

Outbound Telnet

Allows system managers to permanently create TN device names connected to remote devices.

OpenVMS Integration

Provides easier access to TCP/IP functions using OpenVMS DCL commands.

RPC/RPCGEN

RPC enables customers to run procedures on remote systems using the latest SUN™ RPC libraries. RPCGEN enables customers to automatically generate RPC calls.

OpenVMS 64-Bit Support

Provides users with the capability to run on 64-bit OpenVMS V7.0.

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Features

Installation and Configuration

The Digital TCP/IP Services for OpenVMS V4.0 product is installed with VMSINSTAL for VAX computer systems, or with the POLYCENTER Software Installation (PCSI) utility for Alpha computer systems.

For configuration ease, the Digital TCP/IP Services for OpenVMS product provides a menu-driven configuration procedure. This procedure enables you to configure only those services and applications that you use. It also enables you to configure all client software components quickly without selecting individual menu options.

Communications

Communications are based on the 4.3 Berkeley Software Distribution, implementing the following protocols and features:

- Transmission Control Protocol (TCP)
- Internet Protocol (IP)
- Internet Control Message Protocol (ICMP)
- Address Resolution Protocol (ARP)
- User Datagram Protocol (UP)
- Routing Information Protocol (RIP)
- Ethernet support
- FDDI support
- Auxiliary (AUX) Server (*united*), plus enhancements such as security and event logging

Fiber Distributed Data Interface (FDDI) Support

FDDI is an ANSI standard for a network technology based on fiber optics. It specifies a 100-megabit-per-second transmission rate. Digital TCP/IP Services for OpenVMS allows OpenVMS systems to take advantage of this technology by enabling TCP/IP communications with other hosts in these configurations:

- On the same FDDI network
- Over a FDDI/Ethernet bridge
- Over a router

OpenVMS hosts are also able to act as an Internet gateway between FDDI networks and one or more Ethernets.

The management of the FDDI controller is integrated with the TCP/IP network management interface.

Auxiliary Server (United)

The *united* software is the TCP/IP service dispatcher for UNIX systems which was first provided by Berkeley Software Distribution (BSD) 4.3.

This feature significantly simplifies the writing of applications and manages overhead by reducing the number of simultaneous server processes on the system.

The Digital TCP/IP Services for OpenVMS implementation of *united*:

- Listens for incoming connection requests and appropriately starts application services. It controls dynamic process creation in the same manner as the UNIX-based *united*.
- Provides a Services Database.
- Provides security features.
- Offers event logging.

BIND Server

Translates Domain Name System host names to IP addresses. Network managers set up a BIND database to configure primary, secondary, and caching servers on OpenVMS hosts. This complements the BIND resolver, the client part of BIND that requests nodename-to-address translations from a BIND server.

Remote Booting

Remote host booting of diskless clients using OpenVMS as the boot server. This feature uses the BOOTP and TFTP Protocols to initiate the boot request and to download the boot files.

UCX Management with Command-line Interface

UCX Management provides DCL-style commands to control and monitor the UCX software components.

Simple Network Management Protocol (SNMP) Agent

SNMP is the internet standard protocol for network management over TCP/IP. The SNMP agent communicates with network management directors to provide information about network activity. MIB II variables are supported within SNMP.

Security and Network Access Control

System managers use network security features to control the accessibility to OpenVMS systems from remote Internet hosts.

Application Programming Interfaces

Digital TCP/IP Services for OpenVMS V4.0 includes the following application programming interfaces:

— C socket programming interface
Provides the Berkeley socket programming interface to develop TCP/IP networking applications in the C language.

— QIO programming interface
Provides a QIO programming interface to develop TCP/IP networking applications in any OpenVMS language.

— SRIQIO interface
Provides emulation of the SRIQIO interface.

— Sun RPC, with XDR and Portmapper
Sun® Remote Procedure Calls (Sun RPC) are included in the UCX programming interface. The Sun RPC library includes a library of RPC function calls, the Portmapper module, and external Data Representation (XDR) routines.

Applications

This component includes the widespread end-user protocols for file transfer, remote login, remote command processing, remote printing, and mail exchange.

- *File Transfer Protocol (FTP)*

FTP is the internet application protocol for file transfer. It enables users to transfer files to and from remote hosts.

- *Telnet*

Telnet is the internet application protocol for remote login. It enables OpenVMS users to log into remote systems and remote users to log into OpenVMS systems.

Telnet provides support for both character and line modes. It also enables users to activate multiple Telnet sessions.

- *Telnet 3270*

Telnet 3270 enables users to make Telnet connections from OpenVMS systems to remote IBM® systems using a 3270-style terminal interface.

- *Berkeley Remote Commands* (rlogin, rsh, rexec)

Digital TCP/IP Services for OpenVMS implements the popular UNIX remote login (rlogin), remote shell (rsh), and remote executive (rexec) services.

Like Telnet, *remote login* (rlogin) enables users to log into remote systems and remote users to log into OpenVMS systems.

Rsh enables OpenVMS users to execute commands on remote systems and remote users to execute DCL commands on OpenVMS systems. Authentication is based on either user password or proxy access.

- *Remote printing*

Digital TCP/IP Services for OpenVMS provides the following remote printing services:

OpenVMS users can issue DCL-style PRINT commands to print files on remote systems using the LPD protocol.

Similarly, remote users can print files on OpenVMS systems using the LPD protocol.

OpenVMS users can also use the TELNET Print Symbiont to print files on remote systems.

- *Simple Mail Transfer Protocol (SMTP)*

SMTP is the internet application protocol for mail. Users can send and receive electronic mail to and from remote hosts.

Network File System

The *NFS*™ software supports the *Network File System (NFS)* V2.0 protocol specifications. NFS is an application layer protocol that provides clients with transparent access to remote file services.

The NFS server software promotes data sharing among clients by providing a central data storage facility for OpenVMS and UNIX files. The NFS server software provides two types of file access for remote clients:

- Access to OpenVMS files
- Access to files that are compatible with the UNIX Operating System.

Automount

As implemented in Digital TCP/IP Services for OpenVMS, the NFS AUTOMOUNT command transparently mounts and unmounts NFS file systems on an as-needed basis, which is especially useful for mounting file systems and directories that are occasionally needed.

File Conversion On-The-Fly

Maximizes interoperability between OpenVMS and other systems utilizing the NFS protocol by providing a sequential "read on-the-fly" file conversion capability.

PC-NFS Server

Remote PC users mount and access NFS files from OpenVMS. UID/GID identification and authentication of the remote PC user is established through the use of the UCX Proxy Database. Once access is established, users can print via the PC-NFS printing mechanism.

PATHWORKS Integration

Digital TCP/IP Services for OpenVMS V4.0 supports the PATHWORKS IP driver for improved PATHWORKS and TCP/IP integration. (Requires PATHWORKS Version 5 series.)

HARDWARE REQUIREMENTS

Processors Supported: Hardware supported by the OpenVMS operating systems V6.0 or later are supported by this product. Reference SPDs for the specific operating system release for complete list of those products.

Other Hardware Required

One of the following controller interfaces is required:

Integral Ethernet	The Integral Ethernet is a resident Ethernet communications system.
DEFTA	The DEFTA is a high-performance network adapter that connects TURBOchannel systems to ANSI FDDI local area networks.
DEMFA	The DEMFA is a high-performance network adapter that connects XMI systems to ANSI FDDI local area networks. DEMFA requires microcode rev of 1.4 or higher.
DEMNA	The DEMNA is a high-performance network adapter that connects XMI systems to both the Ethernet and IEEE 802.3 local area networks.
PMAD	The PMAD is a network adapter that connects TURBOchannel systems to both the Ethernet and IEEE 802.3 local area networks.
DETRA	Token Ring adapter for TURBOchannel bus.
DW110	Token Ring adapter for ISA bus.
DW300	Token Ring adapter for EISA bus.

Digital TCP/IP Services for OpenVMS can share an Ethernet interface with other Digital networking products, such as DECnet/OSI for OpenVMS.

Disk Space Requirements (Block Cluster Size = 1)

Global Pages = 8100

Global Sections = 42

Disk space required for installation = 17000 blocks (8700 Kbytes)

Disk space required for use (permanent) = 16000 blocks (8200 Kbytes)

These counts refer to the disk space required on the system disk. The sizes are approximate; actual sizes may vary depending on the user's system environment, configuration, and software options.

CLUSTER ENVIRONMENT

This layered product is fully supported when installed on any valid and licensed VMScluster configuration without restrictions. The *HARDWARE REQUIREMENTS* section of this product's Software Product Description details any special hardware required by this product.

SOFTWARE REQUIREMENTS

To qualify for a software support contract, Digital TCP /IP Services for OpenVMS V4.0 requires the OpenVMS Operating System, Version 6.0 or later.

Client access to Digital TCP/IP Services for OpenVMS requires:

A system that supports the protocols specified by NFS V2.0 and all application TCP/IP protocols defined by the Request for Comments (RFCs).

See Appendix A for a list of compatible client systems.

For Systems Using Terminals:

- OpenVMS Operating System V6.0 later

For Workstations Running DECwindows:

- OpenVMS Operating System V6.0 or later

For Workstations Running DECwindows Using Motif®:

- OpenVMS Operating System V6.0 or later
- DECwindows Motif V1.1 (or later) for OpenVMS

GROWTH CONSIDERATIONS

The minimum hardware and software requirements for any future version of this product may be different from the minimum requirements for the current version.

DISTRIBUTION MEDIA

Media and documentation for this product are available on Digital CD-ROM Software Library for OpenVMS (QA-03XAA-H8). Documentation in hardcopy format may be ordered separately.

ORDERING INFORMATION

Digital TCP/IP Client for OpenVMS Alpha

Software Licenses: QL-0M2A*-**
Software Documentation: QA-0LXAA-GZ
Software Product Services: QT-0M2A*-**

Digital TCP/IP Services for OpenVMS Alpha

Software Licenses: QL-0LXA*-**
Software Documentation: QA-0LXAA-GZ
Software Product Services: QT-0LXA*-**

Digital TCP/IP Client Upgrade–Alpha

Software License: QL-0PHA*-**
Software Documentation: QA-0LXAA-GZ
Software Product Services: QT-0PHA*-**

Digital TCP/IP Client for OpenVMS VAX

Software Licenses: QL-GL7A*-**
Software Documentation: QA-VHRAA-GZ
Software Product Services: QT-GL7A*-**

Digital TCP/IP Services for OpenVMS VAX

Software Licenses: QL-VHRA*-**
Software Media: QA-VHRAA-H*
Software Documentation: QA-VHRAA-GZ
Software Product Services: QL-VHRA*-**

Digital TCP/IP Client Upgrade-VAX

Software License: QL-OPJA*-**
Software Documentation: QA-VHRAA-GZ
Software Product Services: QT-OPJA*-**

* Denotes variant fields. For additional information on available licenses, services, and media refer to the appropriate price book. The above information is valid at time of release. Please contact your local Digital office for the most up-to-date information.

SOFTWARE LICENSING

This software is furnished only under a license. For more information about Digital's licensing terms and policies, contact your local Digital office.

License Management Facility Support

This layered product supports the OpenVMS License Management Facility (LMF).

License units for this product are allocated on an unlimited use basis.

For more information about the License Management Facility, see the OpenVMS Operating System Software Product Description (SPD 41.87.xx) or the OpenVMS Operating System documentation.

SOFTWARE PRODUCT SERVICES

A variety of service options are available from Digital. For further information, contact your local Digital office.

SOFTWARE WARRANTY

Warranty for this software product is provided by Digital with the purchase of a license for the product as defined in the Software Warranty Addendum of this SPD.

APPENDIX A

The NFS component of Digital TCP/IP Services for OpenVMS has been tested for interoperability and connectivity with clients of the following systems:

- Sun MicroSystems SunOS
- Hewlett Packard® HP-UX®
- IBM AIX®
- Apple A/UX
- Santa Cruz Operation SCO™ UNIX

The above information is valid at time of release. Please contact your local Digital office for the most up-to-date information.