Software Product Description

PRODUCT NAME: DEC X.25 Gateway Client for ULTRIX, Version 1.1B **SPD 32.34.03**

DESCRIPTION

DEC X.25 Gateway Client for ULTRIX allows a DECnet/OSI for ULTRIX system in a DECnet environment to make logical connections to packet-switching data networks (PSDNs) conforming to CCITT recommendation X.25 (1980, 1984 or 1988) by way of one or more connector node(s).

The connector node may be:

- An X25 Gateway 100/500 product (refer to the DEC X25gateway 100/500 SPD 32.97.xx)
- A DECNIS 500/600 configured as an X.25 Gateway (refer to the DECNIS 500/600 SPD 36.05.xx)
- An X25router 2000 product (refer to the X25router 2000 SPD 28.86.xx)
- VAX Packetnet System Interface (P.S.I.) configured in multi-host mode (refer to the P.S.I. SPD 25.40.xx)

DECnet logical links are established by ULTRIX to connect the DEC X.25 Client host to the connector node. DEC X.25 Gateway Client uses these links to transmit X.25 or X.29 packets between it and the connector node. These links may use any supported DECnet communications path between the client node and the connector node.

Note: Performance of an X.29 connection is directly related to the speed of the DECnet circuit between the Client and connector nodes and the number of intermediate routing nodes.

A single DEC X.25 Gateway Client host can connect to one or more connector nodes concurrently and, hence, access all PSDNs accessible from those connector nodes. The connector node/PSDN combination used for each defined destination must be configured in the DEC X.25 Gateway Client system. Similarly, the Gateway Client system must be correctly configured in the connector node as the destination for the appropriate incoming calls.

DEC X.25 Gateway Client supports the following functions:

- Process-to-process (X.25) communication

  DEC X.25 Gateway Client allows user programs to access X.25 network services via C callable library functions or the standard ULTRIX *socket* interprocess communication mechanism.

- Process-to-terminal (X.29) communication

  Through the programming interface, users of the ULTRIX system may make outgoing calls to other Digital systems or systems that are not Digitals, or suitable network PADs accessible via a PSDN.

- Terminal-to-process (X.29) communication

  Remote terminals connected to the PSDN may access the ULTRIX host running DEC X.25 Gateway Client by means of an X.29 Switched Virtual Circuit (SVC) call.

- TCP/IP over X.25

  An X.25 SVC can be used as the data link protocol for Internet Protocol (IP) traffic in accordance with RFC 1356 (RFC 1356 supersedes and is compatible with RFC 877).

Features

Virtual Circuits

DEC X.25 Gateway Client offers communication over SVCs and supports up to 512 virtual circuits in total per system. One virtual circuit is used for each incoming or outgoing terminal connection, for each X.25 call, and for each DECnet transport connection. No support for Permanent Virtual Circuits (PVCs) is provided.

Process-to-process Communication

The DEC X.25 Gateway Client programming interface allows application programs to access the X.25 packet level either via standard ULTRIX sockets or via C callable library routines.

Functions include the establishment and clearing of network connections, data transmission and reception, sending and receiving of interrupt messages, and resetting of virtual circuits. The interface also provides for automatic segmentation and recombination of messages which are longer than the packet size selected for the circuit.

This interface enables an application program using the X.25 Programming Interface to communicate with complementary software on other systems (Digital or non Digitals).

Terminal Communications

DEC X.25 Gateway Client supports terminal communications according to CCITT recommendations X.3, X.28, and X.29. Only those terminal parameters defined in the X.3 recommendation are explicitly supported; network-specific enhancements or extensions to the X.3 parameters are available at both the X.29 and the host-based PAD user interface. Terminal processes that depend on these extensions may not function correctly when used on other PSDNs or when accessing one PSDN via another for example, international access.

The X.29 interactive terminal interface allows remote asynchronous terminals (character-mode DTEs) connected to the network to communicate with the ULTRIX system in a manner similar to local terminals. The maximum number of terminals supported on an ULTRIX system (both local and X.29 remote) cannot exceed the number for which the system has been configured.

When using applications designed for interactive, local terminal operations, transmission delays or PAD parameter settings can cause inconsistencies between incoming X.29 traffic and the application's operation. It may be necessary to make modifications to the application or alter PAD parameter settings.

The X.29 interface includes a programming capability for the support of specific X.29 signaling requirements including modification of PAD parameters.

Accounting

Accounting information is available at a socket-level interface. The user must write a utility to format call accounting data to match specific customer requirements. For incoming X.29 calls, no information can be retrieved relating to the process or account onto which a user is logged.

Security

An extensive security facility is provided. Control of remote access to the system (incoming security) and local access to the network (outgoing security) are supported. Incoming and outgoing security can be based on any combination of:

- Normal or reverse charging
- Data Terminal Equipment (DTE) number
- Network (PSDN)
- Process (or user) making the outgoing calls
- Application handling the incoming calls

Network Management

The Network Control Language (NCL) is provided for the management of DEC X.25 Gateway Client and DECnet/OSI. NCL provides network management facilities to:

- Define outgoing call destinations
- Define incoming call handling
- Define the connector nodes through which the client system accesses the PSDN
- Modify X.25 frame and packet level parameters
- Define security parameters
- Modify network configuration
- Monitor connection statistics
- Perform network maintenance functions

The network manager can be notified of significant network events such as security violations or network failures through the event logging facility.

Problem solving is facilitated by the ability to trace and analyze frames passing between the PSDN and the DEC X.25 Gateway Client system.

INSTALLATION

Digital recommends that a customer's first purchase of this software product include Digital Installation Services. These services provide for installation of the software product by an experienced Digital Software Specialist. Only customers experienced with Digital's X.25 products should attempt installation.

HARDWARE REQUIREMENTS

Processor and/or hardware configurations as specified in the System Support Addendum (SSA 32.34.03-x).

SOFTWARE REQUIREMENTS

- ULTRIX Operating System
- DECnet/OSI for ULTRIX

Refer to the System Support Addendum (SSA 32.34.03-x) for availability and required versions of prerequisite /optional software.

ORDERING INFORMATION

Software Media: QA-YTAA*-**
Software Documentation: QA-YTAA*-GZ
Software Product Services: QT-YTAA*-**

* Denotes variant fields. For additional information on available licenses, services, and media, refer to the appropriate price book.

Note: The license for DEC X.25 Gateway Client is included in the DECnet/OSI for ULTRIX license.

SOFTWARE LICENSING

This software is furnished under the licensing provisions of Digital Equipment Corporation's Standard Terms and Conditions. For more information about Digital's licensing terms and policies, contact your local Digital office.

The license for DEC X.25 Gateway Client is included in the DECnet/OSI for ULTRIX license. Refer to DECnet/OSI for ULTRIX (SPD 34.97.xx) for License Management Facility information.

SOFTWARE PRODUCT SERVICES

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

System Support Addendum

PRODUCT NAME: DEC X.25 Gateway Client for ULTRIX, Version 1.1B **SSA 32.34.03-A**

HARDWARE REQUIREMENTS

Processors Supported

VAX-Based Processors:

No VAX based processors are supported.

RISC-Based Processors:

DECstation:

DECstation 2100, DECstation 3100,
DECstation 3100s

Personal DECstation 5000 Model 20/25 MX,
Personal DECstation 5000 Model 20/25 HX,
Personal DECstation 5000 Model 20/25 TX,
Personal DECstation 5000 Model 20/25 PXG+,
Personal DECstation 5000 Model 20/25 PXG Turbo+

Personal DECstation 5000 Model 50 HX

DECstation 5000 Model 120/125/133 MX,
DECstation 5000 Model 120/125/133 CX,
DECstation 5000 Model 120/125/133 HX,
DECstation 5000 Model 120/125/133 PX,
DECstation 5000 Model 120/125/133 TX,
DECstation 5000 Model 120/125/133 PXG,
DECstation 5000 Model 120/125/133 PXG+
DECstation 5000 Model 120/125/133 PXG Turbo,
DECstation 5000 Model 120/125/133 PXG Turbo+

DECstation 5000 Model 200 MX,
DECstation 5000 Model 200 CX,
DECstation 5000 Model 200 HX,
DECstation 5000 Model 200 PX,
DECstation 5000 Model 200 TX,
DECstation 5000 Model 200 PXG,
DECstation 5000 Model 200 PXG+,
DECstation 5000 Model 200 PXG Turbo,
DECstation 5000 Model 200 PXG Turbo+

DECstation 5000 Model 240 MX,
DECstation 5000 Model 240 HX,
DECstation 5000 Model 240 TX,
DECstation 5000 Model 240 PXG+,
DECstation 5000 Model 240 PXG Turbo+

DECstation 5000 Model 260 HX,
DECstation 5000 Model 260 PXG+,
DECstation 5000 Model 260 PXG Turbo+

DECsystem:

DECsystem 3100,
DECsystem 5000 Model 25,
DECsystem 5000 Model 150,
DECsystem 5000 Model 200,
DECsystem 5000 Model 240,
DECsystem 5000 Model 260,
DECsystem 5100, DECsystem 5900,
DECsystem 5900 model 260

Processors Not Supported

VAX-Based Processors:

No VAX based processors are supported.

RISC-Based Processors:

DECsystem:

DECsystem 5400, DECsystem 5500,
DECsystem 5810, DECsystem 5820,
DECsystem 5830, DECsystem 5840

Other Hardware Required

System Memory Required:

- At least 1.2M bytes of physical memory
- Memory allocation requirements:

  At least:

  — 1.6M bytes for the DEC X.25 Gateway Client software and data storage, plus

  — 1.7K bytes for each virtual circuit, plus

  — 16 bytes for each active circuit and minimal space for buffers

- A suitable X.25 connector node on the local area network (LAN).

Disk Space Required:

Space required for installation /root:	200K
Space required for installation /usr:	5.2M

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.

SOFTWARE REQUIREMENTS

- ULTRIX Operating System Version 4.3A
- DECnet/OSI for ULTRIX RISC Version 5.1A

GROWTH CONSIDERATIONS

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

DISTRIBUTION MEDIA

Compact Disk

9-track 1600 BPI Magtape (PE), TK50 Streaming Tape

ORDERING INFORMATION

For RISC-Based Systems:

Software Media: QA-YTAA*-**
Software Documentation: QA-YTAA*-GZ
Software Product Services: QT-YTAA*-**

The software license for DEC X.25 Gateway Client is included in the DECnet/OSI for ULTRIX license.

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