Software Product Description

PRODUCT NAME: DECnet/SNA Gateway for Synchronous Transport, Version 1.2 **SPD 25.C6.02**

DESCRIPTION

DECnet/SNA Gateway for Synchronous Transport (DECnet/SNA Gateway-ST) is a member of the DECnet/SNA Gateway product family. This family consists of hardware and software products that allow users to exchange information and share resources bi-directionally between suitably configured Digital systems in a DECnet environment and IBM® systems in a Systems Network Architecture (SNA) environment.

Users on one or more Digital systems can simultaneously perform functions such as accessing IBM application programs or other system resources, act as a 3270 display station, perform data transfer between Digital and IBM file systems, exchange electronic documents and mail messages, submit jobs to IBM batch subsystems acting as a Remote Job Entry workstation, and implement distributed, task-to-task application programs that run between Digital and IBM systems.

The DECnet/SNA product set provides a system connecting DECnet and SNA networks which can be used by a wide variety of Digital-supplied access routines running under VMS, MS–DOS®, and ULTRIX operating environments. DECnet/SNA Gateway-ST is managed and configured using the gateway management software that is part of DECnet/SNA Gateway-ST. For additional information on the various access routines and their capabilities, consult the *OPTIONAL SOFTWARE* section in the System Support Addendum (SSA 25.C6.02-x).

DECnet/SNA Gateway-ST works in conjunction with either of the DEC MicroServer hardware platforms. The DEC MicroServer (DEMSA-S*) provides connectivity for up to four synchronous lines and the DEC MicroServer-SP (DEMSB-S*) provides a single synchronous line connection. For purposes of this document, the term "DEC MicroServer" is used to refer to either hardware device, unless specifically stated otherwise.

DECnet/SNA Gateway-ST is part of both the DECnet and the SNA networks. Architecturally, it is a DECnet Phase IV end node to DECnet and a Physical Unit Type 2.0 to SNA. Its purpose is to provide bi-directional network access between DECnet and SNA networks. The DEC MicroServer provides physical connectivity to an Ethernet Local Area Network and when used in conjunction with DECnet/SNA Gateway-ST software, it provides SNA connectivity to any Phase IV (or Phase IV+) DECnet system in the DECnet network.

This product can be used in networks currently using other DECnet/SNA Gateway systems and can share access routines, Ethernet LANs, and load host resources with those systems.

The DECnet/SNA Gateway-ST software is down-line loaded into the DEC MicroServer. The gateway management software, which is part of the DECnet/SNA Gateway-ST, is required for the VMS or ULTRIX node designated as the load host for DECnet/SNA Gateway-ST. Other DECnet systems wishing access to the SNA network through the DEC MicroServer should be configured with the appropriate DECnet/SNA access routines.

DECnet/SNA Gateway-ST V1.2 supports SNA synchronous communications using the SDLC protocol. The number of links supported depends on the hardware unit being used (DEC MicroServer or DEC MicroServer-SP), line speeds required by the customer, and the electrical interface used. *Table 1* shows the configuration matrix for connecting to the SNA network:

Table 1
Number Of Synchronous Lines Supported

	Maximum Line Speed (Kbps)			
Electrical Interface	**19.2**	**56/64**	**128**	**256**
DEC MicroServer				
RS232-D/V.24	4	–	–	–
V.35	4	4	2	1
DEC MicroServer-SP				
RS232-D/V.24	1	–	–	–

Lines connected to the DEC MicroServer or DEC MicroServer-SP should be configured according to guidelines specified in the DECnet/SNA Gateway-ST user documentation.

Loading DECnet/SNA Gateway-ST Software

The DEC MicroServer requires software to be loaded into memory prior to DECnet/SNA Gateway operation. DECnet/SNA Gateway-ST software is down-line loaded across the Ethernet Local Area Network from a VMS or ULTRIX system acting as a DECnet load host system.

Most VAX, MicroVAX, VAXstation, VAXserver, DECsystem, and DECstation systems running VMS or ULTRIX are supported as Ethernet load hosts for DECnet/SNA Gateway-ST. Supported VMS or ULTRIX load host configurations are described in the System Support Addendum (SSA 25.C6.02-x).

DECnet/SNA Gateway Management

DECnet/SNA gateway management software, which is included in the DECnet/SNA Gateway-ST package, provides configuration and management functions for use with the DECnet/SNA Gateway for Synchronous Transport V1.2. The gateway management features allow the gateway administrator to configure the software executing in the DECnet/SNA Gateway-ST system. It also allows the administrator to set up parameters relating to lines, circuits, physical units, logical units, and other key variables necessary for network-to-network communications between the DECnet and SNA networks. Additionally, it allows the administrator to manage and diagnose problems related to the DECnet/SNA Gateway-ST.

DECnet/SNA gateway management software is required on the VMS or ULTRIX load host and is used to support the DECnet/SNA Gateway-ST. It must also be present on any other VMS or ULTRIX node whose users want to manage DECnet/SNA Gateway-ST and the DEC MicroServer. It is strongly recommended that the management software also be installed on VMS or ULTRIX systems in order to facilitate application debugging functions where IBM Interconnect application programs are developed using the DECnet/SNA Programming Interface products.

Gateway management software includes DECnet-style network management tools for configuring, controlling, monitoring, and troubleshooting the DECnet/SNA Gateway-ST product. These activities are generally performed by the Digital system manager responsible for the designated load host node. Most management functions are performed from a node on the Digital network rather than at or on the Gateway itself.

Management of DECnet/SNA Gateway-ST should be viewed as part of the Digital environment while the management of the synchronous circuits connecting the DECnet/SNA Gateway to the IBM network is a joint responsibility of the IBM and Digital system managers. (Refer to the *Customer Responsibilities* section of this Software Product Description.)

DECnet/SNA gateway management software allows a Digital system operator to bootstrap or restart a DECnet /SNA Gateway remotely and provide configuration and initialization facilities for the DECnet/SNA Gateway.

Problem Isolation and Determination Tools for the Gateway

In addition to event logging and error counters, a wide range of fault isolation tools are included.

Trace capabilities, snatrace for ULTRIX and SNATRACE and NETTRACE for VMS, are provided for use with the DECnet/SNA Gateway-ST to help debug application programs as well as assist in identifying system problems. An operator can run a trace at the Circuit, Physical Unit (PU), or Session level, and then format the data on a specified Digital system. The trace features are helpful in identifying an error for remedial action.

A snapshot monitoring utility is provided to display on a Digital host-controlled terminal the status of the Gateway's buffer availability, the number of SNA sessions currently in progress, and other information that pertains to both the DECnet and SNA network.

If an irrecoverable error should occur during operation of the DECnet/SNA Gateway system, a memory image may be dumped to a designated Ethernet attached VAX or RISC host. This memory image may then be provided to your Digital support personnel for problem diagnosis.

Features

- NRZI support — Signaling mode for the line(s) from the Gateway to the IBM system can be set to NORMAL or NRZI (non-return-to-zero-inverted) so that line characteristics match those set in the IBM ACF /NCP LINE macro.
- Support for FULL duplex transmission — Circuits can be set FULL duplex to allow data to be sent and received simultaneously on full duplex lines. This setting corresponds to DATMODE=FULL in the IBM ACF/NCP PU macro.
- Support for RECFMS — The Gateway can send Record Formatted Maintenance Statistics (RECFMS) messages to the IBM system. These messages contain counters requested by the IBM Network Problem Determination Application (NPDA) using Request Maintenance Statistics (REQMS) messages. Not all RECFMS messages are supported by the Gateway. Refer to the DECnet/SNA Gateway-CT and -ST Management user documentation for more information.

- A simplified configuration procedure — After installing Gateway-ST gateway management software, a single configuration procedure is run which creates command procedures that define items for the DECnet database on the load host, and the SNA and DECnet databases on the Gateway.
- Extended SDLC — Support for Extended Response Mode SDLC (Modulo 128).

When Using DEC MicroServer Hardware

- Synchronous Line support — DECnet/SNA Gateway-ST supports up to four SDLC connections at speeds of 64Kbs/circuit or less, two connections at 128Kbs /circuit, or a single connection at 256Kbs.
- Session support — DECnet/SNA Gateway-ST supports up to 128 concurrent (Logical Unit) sessions for selected access routines.

When Using DEC MicroServer-SP Hardware

- Synchronous Line support — DECnet/SNA Gateway-ST supports one SDLC connection at up to 19.2Kbps.
- Session support — DECnet/SNA Gateway-ST supports up to 32 concurrent (Logical Unit) sessions for selected access routines.

INSTALLATION

In order for this product to be Digital supported, purchase of the Gateway Orientation/Installation Service is REQUIRED in conjunction with the customer's first purchase of a DECnet/SNA Gateway. Please refer to the *SOFTWARE PRODUCT SERVICES* section of this Software Product Description for further details.

Only customers experienced with Digital's IBM Interconnect products should attempt installation of second or subsequent DECnet/SNA Gateways. Any DECnet/SNA Gateway-ST installations performed by customers are REQUIRED to be CERTIFIED by Digital prior to customer purchase of the DECnet/SNA Gateway DECsupport Service, Basic Service, or Self-Maintenance Service. CERTIFICATION is performed by Digital software specialists. For installations that conform to the Software Product Description and cannot be certified, the customer must purchase DECnet/SNA Gateway Orientation/Installation Service to be eligible for DECnet/SNA Gateway DECsupport Service, Basic Service, or Self-Maintenance Service.

Customer Responsibilities

Before installation of the software, the customer must:

- Previously have installed all requisite hardware.
- Obtain, install, and demonstrate as operational any modems and other equipment and facilities necessary to interface to Digital's communication equipment.
- Demonstrate equivalence of operation for modems other than Bell System 201C, 208A, or 209A, IBM 5866 Model 1, AT&T® 2596, 2556, Dataphone® II, (2096A, Digital 2500, or equivalent) type modems, or, in Europe, PTT approved modems.
- Have generated, to Digital's satisfaction, any necessary IBM host software that will be communicating with the DECnet/SNA Gateway.
- Have completed any additional requirements as described in the Orientation and Installation Service.
- Make available for a reasonable period of time, as mutually agreed by Digital and the customer, all hardware, communication facilities, and terminals that are to be used during installation.
- Be prepared to work with the Digital and the IBM system manager in the pre-installation activities outlined in the Orientation and Installation Service.
- Be prepared to modify IBM component generation parameters to support DECnet/SNA Gateway-ST.

Delays caused by any failure to meet these responsibilities will be charged at Digital's then prevailing rate for time and materials.

HARDWARE REQUIREMENTS

In Ethernet Local Area Networks:

- VAX, MicroVAX, VAXstation, VAXserver, DECstation, or DECsystem configuration as specified in the System Support Addendum (SSA 25.C6.02-x)
- DEC MicroServer (DEMSA-Ax or DEMSB-Ax) and appropriate adapter cables
- Bell System compatible modems as listed in the *Customer Responsibilities* section, or, in Europe, PTT approved modems

SOFTWARE REQUIREMENTS

VMS Environment

VMS Operating System
DECnet–VAX

ULTRIX Environment

ULTRIX Operating System
DECnet–ULTRIX

Refer to the System Support Addendum (SSA 25.C6.02-x) for availability and required versions of prerequisite /optional software.

ORDERING INFORMATION

Software Licenses: QL-S01A9-AA
Software Media:
QA-S01AA-** (VAX/VMS)
QA-S01AB-** (VAX/ULTRIX)
QA-S01AC-** (RISC/ULTRIX)
Software Documentation:
QA-S01AA-GZ (VAX/VMS)
QA-S01AB-GZ (VAX/ULTRIX)
QA-S01AC-GZ (RISC/ULTRIX)
Software Product Services: QT-S01A*-**

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

SOFTWARE LICENSING

Users need a separate license for each DEC MicroServer unit on which they will be using DECnet/SNA Gateway-ST (except as otherwise specified by Digital).

The DECnet/SNA Gateway for Synchronous Transport license applies to the DEC MicroServer on which the software executes.

DECnet/SNA gateway management software is required on the Digital load host for DECnet/SNA Gateway-ST. The license to use the gateway management software on the load host is included with the DECnet/SNA Gateway for Synchronous Transport license.

The DECnet/SNA Gateway Management license includes the right to install and fully configure the product on a second backup load host processor, in standby mode, for downline gateway loading in case of primary load host failure.

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.

LICENSE MANAGEMENT FACILITY SUPPORT

This product supports the VMS and ULTRIX License Management Facility.

For more information on the License Management Facility refer to:

- The VMS Operating System Software Product Description (SPD 25.01.xx) or the *License Management Facility* manual of the VMS Operating System documentation set.
- The ULTRIX Operating System Software Product Description (SPD 26.40.xx).

SOFTWARE PRODUCT SERVICES

DECnet/SNA Gateway Orientation and Installation Service

The Gateway Orientation/Installation Service is REQUIRED in conjunction with the customer's first purchase of a DECnet/SNA Gateway if the installation is to be warranted and supported by Digital. The purpose of this service is to insure proper installation of the DECnet/SNA Gateway-ST. It includes the following activities:

- Verify IBM and Digital hardware and software prerequisites.
- Coordinate customer MIS and Digital Software Services resources.
- Review IBM system generation parameters.
- Install the DECnet/SNA Gateway and any load host resident DECnet/SNA Gateway access routine software that has been ordered concurrently with the DECnet/SNA Gateway for the first VMS or ULTRIX host node.
- Verify connectivity between installed access routines and the IBM system if it has been pre-configured according to the guidelines provided by Digital for those products. The following access routines qualify for this verification:
  - — DECnet/SNA VMS 3270 Terminal Emulation
  - — DECnet/SNA VMS DISOSS Document Exchange Facility
  - — DECnet/SNA VMS Printer Emulation
  - — DECnet/SNA VMS Remote Job Entry
  - — DECnet/SNA Data Transfer Facility

Connectivity verification of the DECnet/SNA Gateway with access routine products other than those listed above will be done using the Installation Verification Procedure (IVP) Software Program supplied with each access routine.

An installation service is available for the simultaneous installation of the DECnet/SNA access routines for each additional VMS or ULTRIX system.

Digital will provide these services upon customer notification that the system, including all prerequisite hardware and software, is ready for installation according to the guidelines listed in the *Customer Responsibilities* section of this Software Product Description. Contact your local Field Service office for additional information on these services.

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.

WARRANTY LIMITATIONS

IBM Supported Configurations

This product has been designed to operate with the IBM host systems and software subsystems listed in the System Support Addendum (SSA 25.C6.02-x). While this software may function correctly with other IBM software and equipment, and with hardware and software other than that supported by IBM, Digital cannot offer its standard warranty for this product unless it has been tested with such equipment and software configurations and found acceptable to Digital.

For a complete list of IBM application subsystems (e.g., CICS/VS) that the various DECnet/SNA access routines have been certified against and that are supported configurations by Digital, please consult the respective access routine Software Product Description. (Refer to *Table 4* in the *OPTIONAL SOFTWARE* section of the System Support Addendum).

® IBM is a registered trademark of International Business Machines Corporation.

® AT&T and Dataphone are registered trademarks of American Telephone & Telegraph Co.

® MS–DOS is a registered trademark of Microsoft Corporation.

™ The DIGITAL Logo, CI, DEC, DECnet, DECstation, DECsupport, DECsystem, DECwindows, MicroVAX, MicroVMS, TK, ULTRIX, VAX, VAXcluster, VAXft, VAXserver, VAXstation, and VMS are trademarks of Digital Equipment Corporation.