Software Product Description

PRODUCT NAME: HP SNA 3270 Data Stream Programming Interface for OpenVMS, Version 1.8 **SPD 26.87.11**

This SPD describes *HP SNA 3270 Data Stream Programming Interface for OpenVMS*, which is available for the OpenVMS I64, OpenVMS Alpha and OpenVMS VAX platforms. All information applies to all platforms unless otherwise indicated.

DESCRIPTION

HP SNA 3270 Data Stream Programming Interface for OpenVMS (3270 DS) is a layered software product that allows user-written applications running on suitably configured OpenVMS systems within a DECnet or TCP/IP network or on suitably configured OpenVMS systems within an OpenVMS SNA environment to exchange messages with cooperating applications on an IBM host. The 3270 DS software exists in the OpenVMS system as a shareable image. Access between the cooperating HP and IBM applications is via one of the following SNA servers or gateways:

TCP/IP or DECnet Connections

- *HP SNA Peer Server*
- *HP SNA Domain Gateway*
- *HP SNA Access Server for Windows NT®*
- *HP SNA Server for OpenVMS Alpha*, a layered product that supports local access as well as TCP/IP and DECnet clients

DECnet Only Connections

- *HP DECnet SNA Gateway for Synchronous Transport*
- *HP DECnet SNA Gateway for Channel Transport*
- *HP SNA Server for OpenVMS VAX*, an OpenVMS VAX layered product that supports local access as well as remote DECnet clients

The 3270 DS programming interface is a collection of subroutines that provides an easy-to-use interface for the SNA server or gateway application programmer who has a specific need to interface to an IBM application subsystem that uses the LU type 2 (LU2) protocol. The product can be used with many types of applications. As an example, a customized 3270 terminal emulator application can be written by a user and layered on top of 3270 DS. Applications can be event driven or synchronous in nature with no loss in available functions.

Features

The 3270 DS product is designed to insulate the OpenVMS application programmer from the inner workings of the SNA network environment as much as possible, thus allowing the user to concentrate on solving the application problem. The product performs the following SNA functions on the user's behalf:

- Receives and interprets the bind
- Accepts the bind and starts the session
- Maintains the state machines for chaining, bracketing, and data flow control
- Processes an Unbind Type 2 automatically
- Allows, on supported SNA servers and gateways, secured Logical Unit (LU) access via the SNA3270$REQUEST_CONNECT procedure call.

As a result, the OpenVMS user is required to perform a minimum of SNA functions, including processing the CLEAR and CANCEL functions and handling contention.

This product is a set of subroutines used to perform such functions as establishing sessions, sending data, receiving data, and disconnecting sessions. In addition, the 3270 DS interface may be used to interpret the 3270 data stream and build a screen image. The OpenVMS application is then free to interact with the screen image.

The 3270 DS product allows two modes of connection: Data Stream Mode and Field Mode.

Data Stream Mode

Data Stream Mode provides a means to send and receive uninterpreted 3270 data streams as defined by IBM. In this mode, the interface performs all SNA-specific functions. For example, the OpenVMS application is not required to handle chaining, brackets, RUs, or RHs. At the same time, this mode allows the interface to provide the OpenVMS application with the complete 3270 data stream. It is the OpenVMS user's responsibility to interpret the outbound data stream for 3270 orders and commands, and to build and manipulate a screen image (if desired). Similarly, it is the OpenVMS user's responsibility to build the inbound data stream from the user's own screen image or from some other data structure.

An OpenVMS application that needs to use extended attributes must use a Data Stream Mode connection. Extended attributes are extensions to the basic field attributes, namely:

- Extended highlighting (blink, reverse video, underscore)
- Color
- Programmed symbols (selectable symbol set)
- Screen partitions and windows

Field Mode

Field Mode performs a presentation service to provide a screen image interface. The screen image may be read field by field, or accessed directly. The interface interprets 3270 commands and orders in an outbound data stream to build the screen. In addition, it produces an inbound 3270 data stream from the updated screen image.

As with the Data Stream Mode, Field Mode insulates the OpenVMS user from the SNA protocol. Extended attributes are not supported by the Field Mode connection.

Asynchronous Event Notification

The 3270 DS product provides a mechanism for an OpenVMS user application to receive control when an asynchronous "network event" occurs, such as disconnection of a DECnet logical link, an SNA circuit failure, or the receipt of an Unbind Type 2 from IBM. The OpenVMS application is called at a notification entry point defined by the application at connection time; an indication of the event that occurred is reported.

User Interface

Users of the 3270 DS product should be experienced OpenVMS application programmers. They can use any of the OpenVMS programming languages that conform to the OpenVMS Calling Standard to create application programs that interact with application programs on an IBM system. The user documentation provides example segments written in the following languages:

- MACRO-32
- BLISS-32 Implementation Language
- C
- COBOL
- FORTRAN
- PASCAL
- PL/I

Users of the 3270 DS product are not required to have extensive knowledge of SNA.

INSTALLATION

Installation services from HP are recommended for a customer's first purchase of this software product. These services provide for installation of the software product by an experienced software specialist.

HARDWARE REQUIREMENTS

Processors Supported

Itanium, Alpha and VAX configurations as specified in the OpenVMS Operating System for I64, Alpha and VAX Software Product Description (SPD 82.35.xx and 25.01.xx).

Disk Space Requirements (Block Cluster Size = 1)

Disk space required for installation:

OpenVMS I64	18,500 blocks (9.25 MB)
OpenVMS Alpha	18,000 blocks (9.0 MB)
OpenVMS VAX	17,900 blocks (9.0 MB)

Disk space required for use (permanent):

OpenVMS I64	8,000 blocks (4.0 MB)
OpenVMS Alpha	7,900 blocks (3.95 MB)
OpenVMS VAX	8,800 blocks (4.4 MB)

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

Using *HP SNA 3270 Data Stream Programming Interface for OpenVMS* requires:

- OpenVMS Operating System for I64 Version 8.2-1 or 8.3 (SPD 82.35.xx)
- OpenVMS Operating System Alpha Version 8.2 or 8.3 (SPD 82.35.xx)
- OpenVMS Operating System for VAX Version 7.3 (SPD 25.01.xx)

Using *HP SNA 3270 Data Stream Programming Interface for OpenVMS* requires a networking product appropriate for the version of OpenVMS, plus one of the SNA products listed below.

Networking options include:

- TCP/IP Services for OpenVMS (SPD 46.46.xx)
- DECnet for OpenVMS (Phase IV, SPD 48.48.xx)
- DECnet-Plus (Phase V, SPD 50.45.xx for I64 and Alpha, SPD 25.03.xx for VAX)

Choose a networking option appropriate for the selected OpenVMS version from the following table:

OpenVMS	TCP/IP	DECnet IV	DECnet V
8.3 (I64)	5.6	8.3	8.3
8.2-1 (I64)	5.5	8.2-1	8.2-1
8.3 (Alpha)	5.6	8.3	8.3
8.2 (Alpha)	5.5	8.2	8.2
7.3 (VAX)	5.3	7.3	7.3

Choose *one* of the following SNA options:

- *HP DECnet SNA Gateway for Channel Support (SPD 29.76.xx)*
- *HP DECnet SNA Gateway for Synchronous Transport (SPD 25.C6.xx)*
- *HP SNA Domain Gateway (SPD 38.69.xx)*
- *HP SNA Peer Server (SPD 51.08.xx)*
- *HP SNA Server for OpenVMS Alpha (SPD 70.89.xx)*
- *HP SNA Server for OpenVMS VAX (SPD 27.01.xx)*
- *HP SNA Access Server for Windows NT (SPD 64.79.xx)*

OPTIONAL SOFTWARE

This HP OpenVMS SNA access routine has been qualified and tested to run over the Data Access Incorporated (DAI) Mainframe Gateway for OpenVMS (MGO). Questions and issues related to the DAI MGO product are managed by DAI and are not an HP OpenVMS obligation.

GROWTH CONSIDERATIONS

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

DISTRIBUTION MEDIA

This product is available as part of the OpenVMS I64, Alpha and VAX Software Product Libraries on CD-ROM.

The software documentation for this product is available as part of the OpenVMS I64, Alpha and VAX Online Documentation Libraries on CD-ROM. Documentation in hardcopy format can be ordered separately.

SOFTWARE LICENSING

License Management Facility Support

HP SNA 3270 Data Stream Programming Interface for OpenVMS supports the OpenVMS License Management Facility (LMF). This facility allocates license units as follows:

- For OpenVMS Integrity, each Per Core License (PCL) allows any number of individuals to use the product at the same time, with one PCL license required for each processor core running OpenVMS.
- For OpenVMS Alpha and VAX, the Unlimited license allows any number of individuals to use the product at the same time.

ORDERING INFORMATION

Licenses

License types vary by platform.

HP OpenVMS Integrity Licenses[1]	
SNA 3270 DSPI Per Core License (PCL)[2]:	BA475AC

[1]Update licenses not offered; updates available through SW Updates Service.

[2]Order one PCL license for each active processor core running OpenVMS.

HP OpenVMS Alpha Licenses	
SNA 3270 DSPI Unlimited Use License	QL-01XA*-AA[1]
SNA 3270 DSPI Unlimited Use Update License	QL-01XA*-RA[1]

[1]Asterisk denotes system tier. E=workgroup tier, G=departmental tier, Q=enterprise tier.

HP OpenVMS VAX Licenses	
SNA 3270 DSPI Unlimited Use License	QL-363A*-AA[1]
SNA 3270 DSPI Unlimited Use Update License	QL-363A*-RA[1]

[1]Asterisk denotes system tier. B=workgroup tier, 2=departmental tier, 5=enterprise tier.

Media and Documentation

Product binary kits and online documentation are delivered on consolidated media libraries. Delivery model varies by platform.

HP OpenVMS Integrity Media and Online Documentation[1]	
Foundation Operating Environment	BA322AA#AJR
Enterprise Operating Environment	BA323AA#AJR
Mission Critical Operating Environment	BA324AA#AJR

[1]Product ships on Layered Products Library media included in all Operating Environment media kits, available with initial OpenVMS OE order.

HP OpenVMS Alpha Media and Online Documentation	
Software Layered Products Library Package[1]	QA-03XAA-H8
Software Layered Products and Operating System Library Package [1]	QA-5G98A-H8

[1]Quarterly Software Updates Service is available.

HP OpenVMS VAX Media and Online Documentation	
Software Layered Products Library Package[1]	QA-5G88A-H8
Software Layered Products and Operating System Library Package [1]	QA-YL48A-H8

[1]Quarterly Software Updates Service is available.

HP OpenVMS Documentation (Printed)	
SNA 3270 DSPI Documentation	QL-363AA-GZ

HP OpenVMS Integrity SW Update[1]	
HP SNA 3270 Data Stream VMS I64 Media	BA475AA

[1]For the OpenVMS Integrity platform, media updates are ordered by adding SW Updates Service to individual products. The above media product numbers must be pulled into an order if SW Updates Service is planned.

NOTE: If you are *adding* a layered product to an existing OpenVMS Integrity system and do not have the latest software revision on site, please contact your local Sales Representative to request a Special Media kit.

SOFTWARE PRODUCT SERVICES

A variety of service options are available from HP. For more information, contact your HP account representative or distributor. Information is also available on www.hp.com/hps/software.

SOFTWARE WARRANTY

This software is provided by HP with a ninety-day conformance warranty in accordance with the HP warranty terms applicable to a license purchase.