COMPAQ

Software Product Description

PRODUCT NAME: Compaq SNA 3270 Data Stream Programming Interface for OpenVMS, Version 1.6 **SPD 26.87.09**

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

DESCRIPTION

Compaq 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 Compaq and IBM applications is via one of the following SNA servers or gateways:

TCP/IP or DECnet Connections

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

DECnet Only Connections

- *Compaq DECnet SNA Gateway for Synchronous Transport*
- *Compaq DECnet SNA Gateway for Channel Transport*
- *Compaq 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 Compaq 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

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

Disk Space Requirements (Block Cluster Size = 1)

Disk space required for installation:

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

Disk space required for use (permanent):

OpenVMS Alpha	7,900 blocks (4.0 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

OpenVMS Operating System for Alpha and VAX, Version 6.2, 7.1 (VAX), 7.1-2 (Alpha), 7.2, 7.2-1 (Alpha), or 7.3 (SPD 25.01.xx).

Using *Compaq 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 Alpha, SPD 25.03.xx for VAX).

Choose a networking option appropriate for OpenVMS Versions 6.2, 7.1 (VAX), 7.1-2 (Alpha), 7.2, 7.2-1 (Alpha), or 7.3 from the following table:

OpenVMS	TCP/IP	DECnet IV	DECnet V
6.2	4.2	6.2	6.3
7.1	5.1	7.1	7.1
7.1-2	5.1	7.1-2	7.1
7.2	5.1	7.2	7.2
7.2-1	5.1	7.2-1	7.2-1
7.3	5.1	7.3	7.3

Choose *one* of the following SNA options:

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

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 Alpha and VAX Software Product Libraries on CD-ROM.

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

SOFTWARE WARRANTY

This software is provided by Compaq with a 90-day conformance to warranty in accordance with the Compaq warranty terms applicable to the license purchase.

WARRANTY LIMITATIONS

IBM Supported Configurations

This product is warranted with the IBM software configurations listed in the following table.

Table 1
IBM Software Configurations

Software Product	Version	Release
CICS/ESA	4	1.0
CICS/VSE	2	3.0
CMS/ESA	2	All
IMS/ESA	All	All
NetView	3	1.0, 2.0
Tivoli TIME 10 NetView	1	2.0, 3.0
Transaction Server	All	All
TSO/E	All	All

Table 1 (Cont.)
IBM Software Configurations

Software Product	Version	Release
z/OS	1	1.0

Refer to SNA server or gateway Software Product Descriptions for additional information on supported IBM operating systems, access methods, and communications front-end software.

Note: Compaq will support IBM software configurations, version and release numbers, as long as support for such configurations is generally available from IBM. Other configurations may have been tested since this SPD was published. Please contact your local Compaq office for up-to-date information regarding listed configurations.

ORDERING INFORMATION

For OpenVMS Alpha systems

Software Licenses: QL-10XA*-**

Software Documentation: QA-363AA-GZ

Media and documentation for this product are available on the OpenVMS Alpha Software Product Library and Online Documentation Library on CD-ROM. Documentation in hardcopy format can be ordered separately.

For OpenVMS VAX systems

Software Licenses: QL-363A*-**

Software Documentation: QA-363AA-GZ

Media and documentation for this product are available on the OpenVMS VAX Software Product Library and Online Documentation Library on CD-ROM. Documentation in hardcopy format can be ordered separately.

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

SOFTWARE LICENSING

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

License Management Facility Support

This layered product supports the OpenVMS License Management Facility. License units for this product are allocated on a CPU-capacity basis. For more information on the License Management Facility, refer to the OpenVMS Operating System for Alpha and VAX Software Product Description (SPD 25.01.xx) or the License Management Facility manual of the OpenVMS Operating System documentation set.

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SOFTWARE PRODUCT SERVICES

Installation

Installation provides comprehensive installation and of Compaq and non-Compaq hardware, software, and networks products. These products include systems, servers, upgrades, workstations, terminals, PCs, peripherals, network equipment, operating systems, and layered products. Optional pieces of the Installation offer include site planning and preparation, orientation, and other projects which are based on the installation of computer equipment (e.g. relocation services).

License Subscription

License Subscription provides the license rights to use all new versions of those products, which are released during the contract period. Also included are the rights to use certain server-resident products whose license is included in a corresponding client license.

Telephone Software Support

Software Support provides software problem identification and resolution and operational support for system managers, technical support/helpdesk personnel who manage Compaq and popular multivendor server software in either a standalone or networked environment. This service provides access both to technical resources to assist in problem diagnosis and resolution and to Compaq's information database. This combination of support resources will address system management questions and inquiries on a wide variety of topics including information on the latest product features, known problems and available solutions, and operational advice and assistance to help the system manager, system administrator better manage its information technology environment.

Please contact your local Compaq office for additional information on specific services in your area.

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