Software Product Description

PRODUCT NAME: VMS/SNA, Version 2.1 **SPD 27.01.06**

DESCRIPTION

VMS/SNA is a layered software product that allows suitably configured VMS systems to directly participate in an IBM® Systems Network Architecture (SNA) networking environment. After installing the VMS/SNA software and one or more DECnet/SNA Access Routines, users can perform functions such as accessing IBM® application programs or other system resources, act as a 3270 display station, exchange data files and documents with an IBM Host, and implement distributed application programs that run between the VMS and IBM systems.

Architecturally, a VAX system running VMS/SNA appears to the SNA network as a Physical Unit Type 2 node, and is attached to the SNA network through a synchronous communications device to an IBM 37xx Communications Controller. The VMS/SNA software supports one synchronous communication line at speeds from 1.2K bps to 64K bps, depending on the communications device being used and a maximum of 16-64 concurrent SNA logical unit sessions depending on the VAX CPU it is running on. Both local and remote connections are supported from VMS/SNA into the IBM SNA network, using switched or leased lines in point-to-point or multi-point environments. VMS/SNA also supports connections over X.25 switched virtual circuits using Qualified Logical Link Control (QLLC). VAX Packetnet System Interface (VAX P.S.I.) or VAX P.S.I. Access is required for SNA over X.25 connections.

VMS/SNA can send Record Formatted Maintenance Statistics (RECFMS) messages to the IBM system. These messages contain counters requested by the IBM Netview® Hardware Monitor using Request Maintenance Statistics (REQMS) messages. Not all RECFMS messages are supported by VMS/SNA. Refer to the VMS/SNA user documentation for more information.

Devices supported with VMS/SNA include the DST32, DSH32, DPV11, DSV11, DSF32, DMB32, and DSB32. All VAX P.S.I. supported devices for VAXBI and Q-bus based systems are supported when communicating with X.25 networks using QLLC circuits. This excludes all UNIBUS devices, but does include the KMV1A. See the VAX P.S.I. Software Product Description (SPD 25.40.xx) or VAX P.S.I. Access Software Product Description (SPD 27.78.xx) for more information.

Each device supports different configurations. Refer to Table I at the end of this document for details of each supported device.

Circuits can be set FULL duplex. Data can be sent and received simultaneously on full duplex lines. This setting corresponds to DATMODE=FULL in the IBM ACF/NCP PU macro.

VMS/SNA supports the following session maximums:

Processors	Sessions
MicroVAX 2000, MicroVAX II, VAXstation 3200/3500 and MicroVAX 3100 Models 10e and 20e	16
VAXserver 3100	16
VAXserver 4000 Model 200	16
VAXserver 4000 Model 300	16
MicroVAX 3300, 3400, 3500, 3600	32
VAXserver 3300, 3400, 3500, 3600, 3602, 3900	32
VAXserver 6210, 6220, 6310, 6320	32
VAX 8200, 8250, 8300, 8350, 6210	32
VAX 4000 Model 200	32
VAX 6220, 6230, 8500, 8530, 8550, 8810 (8700)	48
VAX 6310, 6320, 6330, 6000 Model 410	48
VAXserver 6000 Model 410 and 420, VAXserver 6230	48
VAXft 3000 Model 310	48
VAX 4000 Model 300	48
VAX 6240, 6340, 6350, 6360	64
VAX 6000 Model 5xx	64
VAXserver 6000 Model 4xx except 410 & 420	64
VAXserver 6000 Model 5xx	64
VAX 6000 Model 4xx series (except Model 410)	64
VAX 8820 (8800), 8830, 8840	64

Processors	Sessions
VAX 9000-210, VAX 9000 Model 400 Series	64

Users may configure their IBM line to activate more LUs than the maximum number of sessions allowed for the processor. The maximum number of active LUs is twice the number of maximum sessions. For example, 64 LUs may be activated on a MicroVAX 3600.

Whether the connection is via X.25 or SDLC, the functions provided by the VMS/SNA software will be comparable to those provided by the DECnet/SNA Gateway product. Systems wishing access to the SNA environment must be configured with the appropriate DECnet/SNA VMS Access Routines. For additional information on which Access Routines are supported with VMS/SNA, consult the table in the *Optional Software* section of this SPD.

VMS/SNA supports connections over X.25 switched virtual circuits (QLLC) as well as SDLC circuits. The QLLC circuit can be configured to use either Incoming or Outgoing X.25 Switched Vitual Ciruits (SVCs). VMS/SNA does not support X.25 Permanent Virtual Ciruits (PVCs). VMS/SNA requires IBM Network Packet Switched Interface (NPSI) in order to use QLLC circuits. The IBM NPSI software should be generated to support "Boundary Network Node, Qualified Logical Link Control" (BNN QLLC) type-3 switched virtual circuits.

VMS/SNA also supports the following optional facilities for QLLC circuits:

- Flow Control Negotiation
- Closed User Groups
- Reverse Charging

VMS/SNA Management Utilities

VMS/SNA provides the management utilities SNANCP and SNAEVL. SNANCP is used to manage and monitor VMS/SNA components such as line, circuit, PU, and LU. SNANCP provides the human interface for the Digital System Manager to monitor, control, and troubleshoot VMS/SNA and its IBM/SNA environment. All management functions pertaining to VMS/SNA are performed on the VAX. The SNANCP commands allow users to display and modify information pertaining to the line, circuit, PU, LUs, and access names. On-line help is provided. SNAEVL is used to log events generated by these components.

Management of the VMS/SNA node should be viewed as part of the Digital environment; the management of the line connecting the VMS system to the IBM system is a joint responsibility of the IBM and Digital system managers.

VMS/SNA Problem Isolation and Determination Tools

SNA Protocol Trace Utility (SNATRACE) and NETTRACE are problem determination tools that provide frame level tracing of a circuit to help in debugging application programs, as well as identifying system problems. A privileged user can run a trace at the Physical Unit (PU) level, SDLC level, or session level. The trace feature is helpful in identifying an error for remedial action. NETTRACE can also be used to trace QLLC circuits.

The VMS/SNA Installation Verification Procedure (IVP), SNAVMS$IVP, is also useful for problem isolation. SNAVMS$IVP is run separately from any Access Routine, and may be used to verify connectivity to specific IBM applications over specific LU sessions. In failure cases, SNAVMS$IVP displays an expanded error text that attempts to diagnose the cause of failure.

INSTALLATION

Purchase of the VMS/SNA Installation/Orientation Service is REQUIRED in conjunction with the customer's purchase of VMS/SNA software for the first Digital node connected to each IBM host in order for the VMS/SNA software to be warranted and supported by Digital.

Only experienced customers should attempt installation of second or subsequent nodes running the VMS/SNA software.

Customer Responsibilities

Before installation of the software, the customer must:

- Previously have installed all prerequisite hardware including terminals
- 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, AT&T 2596, 2556, Dataphone II (2096A, Digital 2500, or equivalent) type modems, Codex Modem 2250/2260, or in Europe PTT approved modems
- Have generated, to Digital's satisfaction, any necessary IBM host software that will be communicating with the VMS/SNA software

- Have installed VAX P.S.I. or VAX P.S.I. Access, if required. Refer to the VAX P.S.I. and VAX P.S.I. Access Software Product Descriptions (SPD 25.40.xx and SPD 27.78.xx) for Installation Requirements
- Have completed any additional requirements as described in the VMS/SNA Orientation/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 VMS/SNA Orientation/Installation Service
- Be prepared to modify IBM component generation parameters to support the VMS/SNA software

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

Customer Installation

Only customers experienced with IBM Interconnect products should attempt installation of second or subsequent nodes running the VMS/SNA software. Any VMS/SNA software installations performed by customers are REQUIRED to be CERTIFIED by Digital prior to customer purchase of VMS/SNA Service Contracts. CERTIFICATION is performed by Digital software specialists. For installations that conform to the SPD and cannot be certified, the customer must purchase VMS/SNA Orientation/Installation Service to be eligible for VMS/SNA Services.

HARDWARE REQUIREMENTS

VAX, MicroVAX, VAXstation or VAXserver configuration as specified in the System Support Addendum (SSA 27.01.06-x).

SOFTWARE REQUIREMENTS*

For VAXBI and MicroVAX Systems:

- VMS Operating System
- VAX Wide Area Network Device Drivers Software is required for all synchronous devices (except the DPV11 when used with an SDLC circuit) (refer to SPD 29.64.xx)

For SNA over X.25 support, in addition to above:

- VAX Packetnet System Interface (VAX P.S.I.) or VAX P.S.I. Access
- DECnet-VAX

* Refer to the System Support Addendum (SSA 27.01.06-x) for availability and required versions of prerequisite/optional software.

ORDERING INFORMATION

Software Licenses: QL-362A*-**
Software Media: QA-362A*-**
Software Documentation: QA-362A*-GZ
Software Product Services: QT-362A*-**

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

SOFTWARE LICENSING

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

Restrictions/Comments

Cluster licenses are not available for this product; a Single-Use license is necessary for each CPU on which this product will be used.

LICENSE MANAGEMENT FACILITY SUPPORT

This layered product supports the VMS 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 VMS Operating System Software Product Description (SPD 25.01.xx) or the License Management Facility manual of the VMS Operating System documentation set.

For more information about Digital's licensing terms and policies, contact your local Digital office.

SOFTWARE PRODUCT SERVICES

A variety of service options are available from Digital. For more 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.

WARRANTY LIMITATIONS

IBM Supported Configurations

This product has been designed to operate with the IBM software subsystems as specified in the System Support Addendum (SSA 27.01.06-x). While this software may function correctly with other IBM software and equipment, and with software other than that supported by IBM, Digital cannot offer its standard warranty for this software 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 Access Routines have certified against and are supported configurations by Digital, please consult the respective Access Routine Software Product Description. (Refer to the table provided in the *Optional Software* section of the System Support Addendum.)

Table I

Device	VAX CPU	NRZI*	EIA-232-D V.24	V.35	Maximum Line Speed
DMB32	BI	Yes	Yes	Yes	64 Kbps
DSB32	BI	Yes	Yes	Yes	64 Kbps
DSV11	Q-bus	Yes	Yes	Yes	64 Kbps
DPV11	Q-bus	No	Yes	No	9.6 Kbps
DST32	MV2000	Yes	Yes	No	19.2 Kbps
DSH32	MV2000	Yes	Yes	No	19.2 Kbps
DSF32	VAXft3000	Yes	Yes	Yes	64 Kbps

* NRZI support means the signaling mode for the lines from VMS/SNA to the IBM system can be set to NORMAL or NRZI (non-return-to-zero-inverted) so the line characteristics can match those set in the IBM ACF/NCP LINE macro.

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