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Software Product Description

PRODUCT NAME: MAILbus (VAX Message Router Suite), Version 3.5 **SPD 26.33.13**

DESCRIPTION

VAX Message Router (MR) is the core component of Digital Equipment Corporation's MAILbus™ Message Transfer System. VAX Message Router is a layered software product that resides on OpenVMS™ VAX™ systems and provides three services to MAILbus messaging networks — Message Transfer Service, Directory Service and Management Service. The primary use for Message Router and MAILbus is in interpersonal messaging (electronic mail or E-Mail) applications but it may be used by any application, such as DIGITAL's DEC/EDI Electronic Data Interchange software, needing to move information across a computer network.

All components of Version 3.5 of MAILbus 1 are Year 2000 ready and deployed in conjunction with Year 2000 ready User Agents (see below) and Year 2000 ready versions of OpenVMS V7.1, V6.2 and V5.5-2 ensure that operations spanning the Millennium change and beyond behave correctly.

Available as separate products are the VAX Message Router VMSmail Gateway (MRGATE), which provides a connection between MAILbus and VMSmail — the OpenVMS Mail Utility, Message Router X.400 Gateway (MRX) and the VAX Message Router Programmer's Kit (MRIF) for developing applications that interface to MR's Message Transfer Service. V3.5 supercedes all previous versions of these components including V3.3A of MRGATE and MRIF and V2.3 of MRX.

The IBM Gateways MR/PROFS and MR/SNADS have not been tested for Year 2000 readiness and are not included in V3.5 of MAILbus. MRP and MRS will no longer be orderable past July 1998 and are in retirement from August 1998.

Message Transfer Service

VAX Message Router provides a store and forward reliable transfer service for messages through a DECnet™ network. These messages can contain any information needing transport within a DECnet network, including text, data and arbitrary files. Message structure closely resembles that described in the CCITT X.400 Recommendations for Message Handling Systems. However, messages use the encoding method described in the National Institute of Standards and Technologies (NIST, formerly the National Bureau of Standards — NBS) Specification for the Message Format for Computer Based Messaging Systems.

In addition to Message Router, User Agents — application programs such as DIGITAL Office Server and ALL–IN–1™ Office Server Options V3.2 — are required for an originator to create a message or a recipient to read a message when it is delivered. MAILbus Gateways connecting to other vendors' messaging systems or to public messaging networks can also be sources or destinations for messages. Organizations may develop their own applications, using the VAX Message Router Programmer's Kit, to send and receive messages through Message Router.

Message Router provides full support for delivery notification services and transmission of service and status messages. Network managers may establish routing schemes for messages by relying on default DECnet configurations, destination routing using route tables or area routing for large complex networks involving interconnected "hub" nodes for each area.

Directory Service

Message Router contains the MAILbus Directory Service (DDS). DDS is a single logical directory of subscribers and other MAILbus network information which can be distributed across a number of MR systems. End users, through their user agents, may make inquiries of the directory to find the address of their correspondents. MRX uses DDS for address translation for message originators and/or recipients in other vendors' messaging networks or external networks. DDS has utilities to allow replication and automatic update of directory information across the MR nodes in a MAILbus network. DDS will optimally support a population of up to 20,000 subscribers and/or 30 MR nodes.

Management Service

The MR Management Service monitors the mail network for error and exception conditions and helps with routine management of Message Router. Error and exception reports may be delivered to the MR network manager as events happen and/or on a scheduled basis. Management Action Procedures recommend corrective procedures for specific conditions. For complex networks, use of DIGITAL Commander (previously known as MAILbus Monitor), is recommended to assist in the management of the messaging network.

VAX Message Router VMSmail Gateway

The VAX Message Router VMSmail Gateway (MRGATE), available as a separate layered software product, provides an interface between the MAILbus Message Transfer Service and the OpenVMS Mail Utility. MRGATE provides conversion between the NIST protocols of Message Router and the MAIL-11 protocols of VMSmail. Address conversion is accomplished through use of an extended address syntax without reference to the DDS Directory Service.

Limited document content conversion is performed on messages passing from Message Router to VMSmail. WPS–PLUS™ and DECdx™ format documents are converted to ASCII text format. Any other file types are passed through MRGATE unconverted. If a message contains multiple text attachments, these attachments are concatenated into a single ASCII text message for onward transmission through VMSmail. If the message contains unlike attachments, a set of pre-defined rules determine which attachments are forwarded to VMSmail and which are dropped, since VMSmail does not support multiple content types in a single message. Only text message transfer is supported when the message recipient's system is running the OpenVMS Mail Utility, Version 5.1 or earlier.

No content conversion is performed on messages passing from VMSmail to Message Router.

To provide connection to MAILbus, the VAX Message Router software is required by and included with the license and media kit for VAX Message Router VMSmail Gateway.

VAX Message Router X.400 Gateway

VAX Message Router X.400 (MRX) Gateway is a network server layered software product that resides on an OpenVMS VAX system and provides interconnection between MAILbus and a CCITT 1984 X.400 Message Handling System. Together, VAX Message Router X.400 Gateway and VAX Message Router (MR) form a Message Transfer Agent conforming to the CCITT 1984 X.400 Series of Recommendations for Message Handling Systems, and can act as either a Private Management Domain (private messaging network) or an Administration Management Domain (public messaging network).

The MRX Gateway allows users of systems connected to MAILbus to communicate with users of X.400 Message Handling Systems. Users of systems connected through other gateways to MAILbus can also access the MRX Gateway and systems connected through it. The MRX Gateway can be connected to an X.400 Gateway from another system vendor, to an X.400 Private Management Domain, or to an X.400 Administration Management Domain. Applications such as DEC/EDI (Digital's Electronic Data Interchange) software can also use MRX as a connection to public and private networks.

The VAX Message Router X.400 Gateway interworks with systems that conform to the CCITT X.400 1984 recommendations as defined in the profiles produced by:

- Stable Implementation Agreements for Open Systems Interconnection Protocols: Part 7 - 1984 Message Handling Systems, Output from December 1992 OSI Implementors Workshop (NIST - National Institute of Science and Technology).
- CEN/CENELEC ENV 41 201 (profile(A/3211) for private domains)
- CEN/CENELEC ENV 41 202 (profile(A/311) for administration domains)

These profiles are not uniform and where differences exist, the product follows the NIST profile. Some restrictions on the level of service obtained between message originator and recipient may apply if all the systems involved in the message transfer do not conform to the X.400 Recommendations.

MRX Message Content Conversion

The MRX Gateway provides translation and conversion services between the NIST/NBS protocols and service elements of MAILbus and those specified by the X.400 Recommendations. Message content conversion is also performed by MRX. Digital's WPS–PLUS, DECdx, ASCII (Digital Multi-National Character Set), DDIF (Digital Document Interchange Format) and text document formats are converted to IA5, Teletex or ISO 6937 formats when passed from the MAILbus to the X.400 network. IA5, Teletex or ISO 6937 documents received from the X.400 network are passed into MAILbus as ASCII (DIGITAL Multi-National Character Set) text files.

The MRX Gateway also supports the transmission and receipt of binary data using the Undefined BodyPart (Tag 14) feature described in the CCITT X.400-Series Implementor's Guide, 1986 and the NIST Stable Implementation Agreements for Open Systems Interconnection Protocols, Version 6, 1992. The product documentation describes the capabilities and limitations of binary file transfer using the MRX Gateway.

Unconverted transmission and receipt of WPS–PLUS and all DIGITAL RMS file formats directly to and from another domain with which a bilateral agreement has been made and which also uses VAX Message Router X.400 Gateway for the connection is possible using the USABodyPart (Tag 310), as described in the NIST Stable Implementation Agreements for Open Systems Interconnection Protocols, Version 6, 1992.

Conversion alternatives are chosen on a gateway wide basis during the configuration process for VAX Message Router X.400 Gateway.

Content and identity conversion for DIGITAL's MAILbus to X.400 transfer summarized in the following table.

Table 1

Digital Message Format	Default Conversion	Optional Conversion
ASCII, WPS–PLUS, DECdx, and DDIF Text	IA5	Teletex or ISO 6937
DDIF Text, Graphics and Image	USABodyPart (Tag 310)	OdaBodyPart (Tag 12)
Binary Files DECbodypart 7	USABodyPart (Tag 310)	Undefined BodyPart (Tag 14)

Content and identity conversion for X.400 to DIGITAL's MAILbus transfer summarized in the following table.

Table 2

X.400 Message Format	Default Conversion	Optional Conversion
IA5	ASCII	
Teletex	ASCII	
ISO 6937	ASCII	
OdaBodyPart (Tag 12)	Non-Delivery Notice returned to sender	DDIF
Undefined BodyPart (Tag 14)	DECbodypart 7	
USABodyPart (Tag 310)	DECbodypart 7	

The VAX Message Router X.400 Gateway is designed to conform with U.S. GOSIP Version 1.0 and U.K. GOSIP, Version 3.1.

The Directory Service (DDS), part of VAX Message Router, is used for address translation between X.400 Originator/Recipient (O/R) Names and MAILbus addresses when messages are transferred to or from the X.400 network. This directory is also used to authorize originators of outgoing messages to the X.400 network.

The MRX Gateway may use either an X.25 wide area network link or an IEEE 802.3/ISO 8802-3/Ethernet local area network to communicate with:

- Another X.400 Gateway (back-to-back) within the same network
- Another vendor's X.400 MTA within the same network
- A private domain (from a private or administration domain)
- An administration domain (from a private or administration domain)

To provide connection to MAILbus, the VAX Message Router software is required by and included with the software license and media kit for VAX Message Router X.400 Gateway.

VAX Message Router Programmer's Kit

Available as a separate product, the VAX Message Router Programmer's Kit (MRIF) consists of a run-time library of high-level interface routines that may be built into user applications and a *Programming Guide* to assist users in writing those applications. This material simplifies the development of the application program modules that assemble and disassemble messages,

post and fetch messages from Message Router, and handle messaging service elements.

A message transfer service remote access routine for OpenVMS Alpha systems is provided. An application developed using MRIF may be ported to run on an OpenVMS Alpha system and make remote connection to the OpenVMS VAX system on which VAX Message Router resides.

MRIF is required only for application development. The applications developed using it may be run on any MR system without MRIF being installed on that system, MR itself containing the necessary run time libraries. The remote access routine for OpenVMS Alpha systems allows applications developed using MRIF to be ported to OpenVMS Alpha systems and to connect to any MR system without MRIF being installed on that system.

To provide connection to MAILbus, the VAX Message Router software is required by and is included with the license and media kit for VAX Message Router Programmer's Kit.

INSTALLATION

Message Router forms only one part of a distributed electronic messaging application. Important activities, such as coordination with other messaging components and planning for the subscriber entries in the directory service, must precede the installation of this product. DIGITAL offers a number of services to assist customers with these tasks. Refer to the *SOFTWARE PRODUCT SERVICES* section of this SPD for more information.

Only experienced customers should attempt installation of these products. Digital recommends that all other customers purchase DIGITAL's Installation Services. These services provide for installation of the software products by an experienced DIGITAL Software Specialist.

HARDWARE REQUIREMENTS

All OpenVMS VAX systems are supported with the following exceptions:

MicroVAX I, VAXstation I, VAX–11/725, VAX–11/782, VAXstation 8000

Processor Restrictions

VAX–11/730 systems require a minimum of an R80/RL™02 or RA™60 configuration.

A TK™50 Tape Drive is required for standalone MicroVAX 2000 and VAXstation 2000 systems.

OpenVMS Alpha systems are not supported.

Disk Space Requirements (Block Cluster Size = 1):

VAX Message Router:

Disk space required for installation:	19,000 blocks (9,728K bytes)
Disk space required for use (permanent):	10,000 blocks (5,120K bytes)

VAX Message Router VMSmail Gateway:

Disk space required for installation:	5,000 blocks (2,560K bytes)
Disk space required for use (permanent):	2,500 blocks (1,280K bytes)

VAX Message X.400 Gateway:

Disk space required for installation	25,000 blocks (12,800 Kbytes)
Disk space required for use (permanent)	5,000 blocks (2,560 Kbytes)

VAX Message Router Programmer's Kit:

Disk space required for installation:	2,000 blocks (1,024K bytes)
Disk space required for use (permanent):	2,000 blocks (1,024K bytes)

These block 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 selected. Data files will require additional space.

CLUSTER ENVIRONMENT

These layered product are fully supported when installed as single logical instances on any valid and licensed VAXcluster™* configuration. Multiple logically separate instances of these products installed on the same VAXcluster configuration are not supported.

* V5.x VAXcluster configurations are fully described in the OpenVMScluster Software Product Description (29.78.xx) and include CI™, Ethernet, and Mixed Interconnect configurations.

SOFTWARE REQUIREMENTS

- The Year 2000 ready releases of OpenVMS VAX Operating Systems V5.5-2, V6.2 and V7.1
- WARNING: Because MR versions prior to V3.5 have not been certified on these Year 2000 ready releases of OpenVMS they will not be supported past 1999. ie customers must upgrade to MR V3.5 before Year 2000 to continue receiving support from DIGITAL as per their Service agreements
- For operation of MRX, OSAK V1.1 is required and this is dependant upon DECnet–VAX. Only DECnet™/OSI V6.3 on OpenVMS V6.2 is Year 2000 ready. ie.MRX is only supported on OpenVMS V6.2 past 1999.
- The VAX Message Router Version 3.5 software is required by and included with the software license and media kits for VAX Message Router VMSmail Gateway Version 3.5, VAX Message Router X.400 Gateway Version V3.5 and VAX Message Router Programmer's Kit Version 3.5.

OpenVMS Tailoring

For OpenVMS systems, the following OpenVMS classes are required for full functionality of this layered product:

- OpenVMS Required Saveset
- Network Support
- Programming Support
- Secure User's Environment
- Utilities

For more information on OpenVMS classes and tailoring, refer to the OpenVMS Operating System Software Product Description (SPD 25.01.xx).

OPTIONAL SOFTWARE

User Agent and Applications: Year 2000 ready versions of messaging servers are supported namely:

- ALL–IN–1™ Office Server Options for OpenVMS V3.2
- DIGITAL Office Server for OpenVMS V4.0, V4.0A, V5.0

ORDERING INFORMATION

VAX Message Router

Software Licenses: QL-732A*-**
Software Media: QA-732A*-**
Software Documentation: QA-732A*-GZ.V3.5
Software Product Services: QT-732A*-**

VAX Message Router VMSmail Gateway

Software Licenses: QL-730A*-**
Software Media: QA-730A*-**
Software Documentation: QA-730A*-GZ.V3.5
Software Product Services: QT-730A*-**

VAX Message Router X.400 Gateway

Software Licenses: QL-VDMA*-**
Software Media: QA-VDMA*-**
Software Documentation: QA-VDMA*-GZ.V3.5
Software Product Services: QT-VDMA*-**

VAX Message Router Programmer's Kit

Software Licenses: QL-733A*-**
Software Media: QA-733A*-**
Software Documentation: QA-733A*-GZ.V3.5
Software Product Services: QT-733A*-**

* 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 Equipment Corporation's Standard Terms and Conditions. For more information about Digital's licensing terms and policies, contact your local Digital office.

A license for VAX Message Router is included with the license of many Digital messaging products for which it is a prerequisite. The license for the VAX Message Router Programmer's kit includes the right to use the remote access routine for OpenVMS Alpha systems by applications developed using MRIF and which are then ported to run on OpenVMS Alpha systems.

License Management Facility Support

These layered products support the OpenVMS License Management Facility.

License units for these products are allocated on an unlimited system use basis.

For more information on the License Management Facility, refer to the OpenVMS VAX Operating System Software Product Description (SPD 25.01.xx) or the *License Management Facility* manual of the OpenVMS VAX Operating System documentation set.

SOFTWARE PRODUCT SERVICES

MAILbus products are components of larger distributed messaging applications, which may involve multiple vendors' systems in multiple locations. Digital offers a number of consulting services to assist customers in the planning, installation and management of these messaging applications and related directory services, integration of PC-based messaging systems, and the provision of network wide directory services.

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

SOFTWARE WARRANTY

Warranty for these software products is provided by Digital with the purchase of a license for the product. This software is provided by DIGITAL with a 90 day conformance warranty in accordance with the DIGITAL warranty terms applicable to the license purchased. The 'one year, rights to use new versions' is no longer included with the product licenses. The License Subscription service covering these rights must be ordered as a separate line-item.

Warranty Limitations

The VAX Message Router VMSmail Gateway performs content conversion on WPS–PLUS and DECdx documents. Absolute fidelity between an original document and the resulting document, as printed or displayed by the receiving system, is not guaranteed. The differences between design approaches to word processing systems, the transformations required for the transfer and printing of a document, and the types of printers used may all affect the resulting printed document.

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