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Software Product Description

PRODUCT NAME: DECmessageQ for OS/2®, Version 3.2 **SPD 53.34.00**

DESCRIPTION

DECmessageQ for OS/2® is the OS/2 Operating System implementation of a generic software message queuing bus that provides easy-to-use, efficient task-to-task communications among processes using DECmessageQ on OpenVMS, Digital UNIX®, HP-UX™, AIX®, OS/2®, and Solaris® and SunOS®. NCR UNIX®.

A common call interface allows messages to be delivered via local interprocess communications for intra-CPU applications, or via Transmission Control Protocol/Internet Protocol (TCP/IP) and DECnet (OpenVMS, Digital UNIX, Windows NT and OS/2) for inter-CPU applications. Applications can be designed so client applications can be redeployed easily anywhere within the DECmessageQ network configuration, whether in a standalone node, a local area network (LAN), or a wide area network (WAN).

The DECmessageQ communications implementation is designed for ease-of-use, expandability, and efficiency. Its features include:

- High speed local message delivery using local interprocess communications
- Remote message delivery via TCP/IP or DECnet for OpenVMS, Digital UNIX, Windows NT, and MS-Windows.
- Remote message delivery via TCP/IP for OS/2, HP-UX, SunOS, Solaris, AIX and NCR UNIX.
- Fully asynchronous and synchronous receipt of messages
- Message sizes up to 32,000 bytes
- Priority queuing of messages
- Selective reception of messages by queue number or priority

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- Shared input queues using Multi-Reader Queues (MRQ)
- Use of intra-CPU naming through a local naming service
- Set of message delivery options
- A maximum of 999 queues per DECmessageQ Group
- A maximum of 32,000 DECmessageQ Groups per bus
- User-settable timers with timer expiration delivered via messages placed in the user's primary queue
- Utilities for monitoring the network configuration and flow of messages
- Dynamic addition of CPUs to the communications network
- Message interface for retrieving DECmessageQ configuration information on line
- Configuration information stored in the OS/2 Registry
- Threads support for OS/2 Kernel Threads
- All DECmessageQ callable services available through Dynamic Link Libraries
- Portable call interface
- Connectivity to DECmessageQ implementations on OpenVMS, Digital UNIX, HP-UX, AIX, OS/2, MS-Windows, Windows NT, Solaris, SunOS and NCR UNIX.

DECmessageQ for OS/2 can also be used as an integration tool to merge many external events with the message queuing bus. In addition to integrating messages from local processes and remote processes, DECmessageQ also provides facilities for the integration of other events such as:

- Timer settings
- Simulated messages
- Other external events such as special hardware I/O

DECmessageQ Queues

DECmessageQ for OS/2 provides three types of queues. A queue is a memory storage location for DECmessageQ messages. Any process can insert a message into any queue. These queues are accessed directly by DECmessageQ procedures. These procedures are called by user-written applications. DECmessageQ queue types are:

- Primary Queue (PQ) — Each process that attaches to the message queuing bus is assigned a Primary Queue. This queue is used to receive messages from processes using DECmessageQ.

- Secondary Queue (SQ) — Any process may attach to one or more secondary queues. These queues can also be used to receive messages. The order in which queues are scanned for messages is defined by the DECmessageQ selection rules.
- Multi-Reader Queue (MRQ) — A Multi-Reader Queue is a single shared queue that can be shared by any number of simultaneous readers.

Message Recovery Services (MRS)

Message Recovery Services for the DECmessageQ Message Queuing Bus extends data recovery to the level of pending messages. Using Message Recovery Services, the sender is relieved of the responsibility of tracking the progress of a message through its next level of processing. This functionality can be used both at the client and server sides of the application.

Message Recovery Services increase the robustness of DECmessageQ by providing applications with the ability to recover from message delivery failures due to:

- Application program abort
- Communication line failure
- System crash

Some of the application requirements addressed by MRS are:

- Sender wishes to insure delivery of messages when the receiving process is available but does not wish to monitor the delivery.
- Sender wishes to know that a message is recoverable to avoid the cost of reconstructing it but does not care when it is finally delivered.
- Receiver wishes to maintain a journal of all messages received by it for audit trail or reprocessing.

Message Recovery Services are primarily implemented by an MRS server, a non-privileged program attached to the DECmessageQ Message Bus. MRS actions are invoked by standard DECmessageQ send and receive message calls.

MRS is oriented toward messages, not processes; not all messages sent from or directed to a particular process need to be processed by MRS. This allows applications to selectively incur the additional processing imposed by MRS for just those messages that are not easily recovered. Message recovery characteristics are set by the sending process.

Delivery Options

DECmessageQ for OS/2 provides the following set of delivery options:

- Datagram — A non-recoverable attempt is made to deliver a message. If the message cannot be delivered to a target, then an error is logged.
- Blocking and non-blocking enqueue — The sending process will be notified when the message is written to the target queue. A return status will indicate if the message successfully enqueued to the queue.
- Blocking and non-blocking dequeue - The sending process will be notified when the message is read from the target queue. A return status will indicate if the message successfully dequeued from the queue.
- Blocking and non-blocking Acknowledge - The sending process will be notified when the target process confirms the message. A return status will indicate if the message was successfully confirmed by the target.
- Blocking and non-blocking Recoverable - The sending process will be notified when the recovery system has accepted the message. A return status will indicate if the message was successfully journalled by the recovery system.
- Blocking and non-blocking Recoverable Acknowledge - The sending process will be notified when the target process has confirmed the recoverable message. A return status will indicate if the message was successfully confirmed by the target process.

HARDWARE REQUIREMENTS

Processors Supported — Intel™ Processors for Development and Run-time Only:

Intel 486, or Pentium-based personal computers

Disk Space Requirements

The maximum disk space required for any DECmessageQ OS/2 V3.2 Product is 10 MB.

This value refers to the disk space required on the user file system. This size is an approximate; actual size may vary depending on the user's system environment, configuration, and software options.

SOFTWARE REQUIREMENTS

- OS/2 Operating System Version 2.11 or higher
- IBM OS/2 TCP/IP V2.0 or higher
- If the development kit is ordered the IBM TCP/IP programmers toolkit is required as well.

GROWTH CONSIDERATIONS

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

DISTRIBUTION MEDIA

DECmessageQ for OS/2:

- CD–ROM and RX23

ORDERING INFORMATION

Development Option

All DECmessageQ for OS/2 Development Options include the base message queuing software and language compiler binding libraries.

Run-Time Only Option

All DECmessageQ for OS/2 Run-Time Only Options provide all the facilities of the development versions of DECmessageQ for OS/2 except the language compiler binding libraries. The purpose of the Run-Time Only version is to support the execution of previously developed applications on a target machine. Program development is not supported under the Run-Time Only Option.

DECmessageQ for OS/2 Software Licenses

DECmessageQ for OS/2 Development:
QL-56VAW-AA

DECmessageQ for OS/2 Run-Time Only:
QL-56WAW-AA

DECmessageQ for OS/2 Software Media

DECmessageQ for OS/2 Development:
QA-56VAA-H*

DECmessageQ for OS/2 Run-Time Only:
QA-56WAA-H*

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DECmessageQ for OS/2 Software Documentation

DECmessageQ for OS/2 Systems: QA-56VAA-GZ

DECmessageQ for OS/2 Software Product Services

DECmessageQ for OS/2 Development:
QT-56VA*-**

DECmessageQ for OS/2 Run-Time Only:
QT-56WA*-**

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

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