# Software Product Description

**PRODUCT NAME: DECmcc Director, Version 1.1** **SPD 32.46.01**

## DESCRIPTION

The DECmcc software implements Digital's Enterprise Management Architecture (EMA) director model, consistent with the ISO/OSI management framework. The DECmcc Director software, initially implemented under VMS Operating Systems, lets users control, monitor, and test manageable objects (entities) in a network.

The EMA Director Model defines a management platform called a director and cooperating but independent software components named "management modules." The DECmcc Director is comprised of a director and management modules of the following types:

- Access Modules (AMs) provide access to and information about different classes of entities.
- Function Modules (FMs) provide high-level management functions for managed entities.
- Presentation Modules (PMs) provide a consistent user interface for Function modules.

The core of the DECmcc software is the Executive which consists of a management kernel and a set of "function modules." The Executive also includes a Management Information Repository (MIR) which defines a consistent structure for viewing management data. Together they form DECmcc's operating environment for co-existence and interoperation of management modules.

The DECmcc Director software allows a user to observe and control a selected group of DECnet-VAX Phase IV and many other entities from a common command syntax and a consistent user interface. The DECmcc command syntax is compliant with Digital's Network Control Language (NCL), the command line syntax used for network management commands. Other classes of entities may be managed through additional access modules enrolled in the DECmcc Director software.

The director supports the collection of network events.

With proper planning, deployment and use, DECmcc management systems are scalable to the size of the network, ranging from a small, homogeneous local area network to an enterprise-wide, multivendor, distributed environment. DECmcc software supports either, or both, centralized or distributed management styles.

The DECmcc Director is a single-license product consisting of EMA-compliant DECmcc Executive and Management Modules. The following is a list of the software components and modules that comprise the DECmcc Director.

*EXECUTIVE*

The DECmcc EXECUTIVE provides the environment in which DECmcc software management modules operate, allowing them to communicate with each other and with management information stored in the MIR. The DECmcc EXECUTIVE consists of the management kernel, the Management Information Repository (MIR), and the Executive function modules.

Among the features of the EXECUTIVE is that, in conjunction with appropriate access modules, it provides the ability to monitor managed entities. This can be done by polling or through a combination of polling and acting as a collection point for unsolicited entity event messages. *Management Kernel*

The management kernel provides the operating environment, and dispatching services for "access" and "function" modules. The operating environment consists of a multi-threaded processing system, contained within VMS processes, along with a set of callable procedures.

*Management Information Repository (MIR)*

The MIR is an integrated repository that contains definitions of entity classes, entity instances, entity attributes, entity events and private or miscellaneous data required by individual management modules. The MIR provides storage and access routines for maintaining management information within the DECmcc software. Entity Model with is consistent with the ISO/OSI Structure of Management Information (SDI).

digital™

March 1991
AE-PC7JB-TE

**EXECUTIVE Function Modules**

*Control FM*

The Control FM provides access to primitive directives for observation and control of managed entities. The Control FM supports a pre-defined list of basic directives, plus a small set of generic directives that can be used for different purposes by different AMs.

*Registration FM*

The Registration FM, in conjunction with the VAX Distributed Name Server (VAXDNS) manages data identifying each entity in a network. It also defines and manages a set of common reference attributes for all entities. The Registration FM uses VAXDNS as the DECmcc instance repository. This allows multiple DECmcc systems to share the same view of entity configurations.

*Domain FM*

The Domain FM works in conjunction with the Registration FM to enable users to define spheres of management interest. Domains may contain other domains we well as reference other domains. Users can set up hierarchical domains and navigate through the managed network from a top-down view. Domains can be represented on the Iconic Map PM, enabling users to select domains and manage the entities that comprise them.

**Access Modules**

*DECnet Phase IV AM*

The DECnet Phase IV AM allows users to manage DECnet Phase IV entities such as nodes, circuits, lines, and objects. The DECnet Phase IV AM provides an access path to and information about the entities it supports. The DECnet Phase IV AM supports one global entity class, NODE4, and a number of child entity classes such as lines and circuits. With the DECnet Phase IV AM, typical management operations might include gathering counters from a child entity (e.g., line) through its parent (e.g., a DECnet Phase IV Node), or modifying parameters on a remote node.

*Sample AM*

A Sample Access Module is included as part of the DECmcc Director. The Sample AM implements a single management directive, the SHOW directive, for the DECnet Phase IV node entity and associated line subentity. The SHOW directive displays various Characteristic, Status and Counter attributes for each entity. The Sample Access Module implements a SHOW and TEST management directive to manage the Access Module itself to illustrate the "management of management" concept. Including the Sample AM with the DECmcc Director is intended to ensure proper end-user licensing of access modules developed using source code provided in the DECmcc Toolkit (SPD 32.49.xx).

**Presentation Modules**

Presentation Modules included with the DECmcc Director are the Iconic Map and the Forms and Command Line (FCL) PMs. The FCL PM supports tow modes of operation, Command Line Mode and Forms Interface Mode.

*Iconic Map PM*

The Iconic Map presentation module enables users to interact with the DECmcc director using a mouse control. Commands as well as management data can be accessed by selecting icons representing managed domains and entities in a map window and through the use of pull-down command windows.

*FCL PM - Command-Line Mode*

FCL Command-Line Mode is a terminal based user interface that uses command-line input and output techniques. It is compliant with Digital's NCL, the command line syntax used for DECnet network management commands.

Command-Line Mode is available from and terminal or workstation compatible with Digital's VT220 terminal. It supports command line recall and editing, abbreviation support, on-line help, symbol substitution, support of control key sequences, line continuation, and typeahead.

The user interface structure also allows a VMS DCL process to be "spawned."

*FCL PM - Forms Interface Mode*

The Forms Interface Mode is an extension of the command-line interface that provides a screen based user interface, using forms and list input and output techniques. It is available from any terminal or workstation compatible with Digital's VT220 terminal.

The screen format contains two regions. One region is for entering data to input fields for issuing DECmcc commands or "directives." The other region is for viewing data or output resulting from DECmcc directives. Arrow keys, Previous and Next screen keys may be used for reviewing the data in the output region.

*Utilities*

Several utilities are included that enable on-site enrollment of access modules not provided with the DECmcc Director. Documentation required for such module enrollment is supplied by the module developer. The utilities are:

- Dictionary Access Program (DAP) Utility,
- Parse Table Builder (PTB) Utility,
- Test Bed Driver (TBD) Utility,
- Help File Builder (HFB) Utility

The *DECmcc Developer's Toolkit Reference* manual (order number AA-PD5MA-TE) describes each of the tools in detail.

*On-Line HELP Information*

DECmcc includes extensive online HELP information similar to VMS HELP. Help information is provided in the following four categories: Entity information, Function information, Presentation information, and Tutorial information.

## HARDWARE REQUIREMENTS

VAX, MicroVAX, VAXstation or VAXserver configurations as specified in the System Support Addendum (SSA 32.46.01-x).

## SOFTWARE REQUIREMENTS *

VMS Operating System

*Layered Products:*

DECnet-VAX
VAX Distributed Name Service (VAX DNS) - Server must be installed somewhere in network.

*For Workstations Running DECwindows:*

VMS Operating System (and necessary components of DECwindows)

*Layered Products:*

DECnet-VAX
VAX Distributed Name Service (VAX DNS) - Server must be installed somewhere in the network.

* Please refer to the System Support Addendum (SSA 32.46.01-x) for required versions of prerequisite/optional software.

## ORDERING INFORMATION

Software Licenses: QL-VM9A9-AA
Software Media: QL-VM9AA-H5
Software Documentation: QL-VM9AA-GZ
Software Product Services: QT-VM9A*-**

- 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, please contact your local Digital office.

## LICENSE MANAGEMENT FACILITY

This layered product supports the VMS License Management Facility (LMF).

License units for this product are allocated at a flat price basis, regardless of User/Activity or processor type.

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, please 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.

Other Network Management Services are also available. These include, but are not restricted to, the following:

- Network Management Operations Services
- Network Management Planning and Design Services
- Network Management Implementation Services
- Network Management Training

For local availability, please contact your Digital Sales 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.

™ The DIGITAL Logo, VAX, MicroVAX, VAXstation, VAXserver, VMS, DECmcc and DECnet are trademarks of Digital Equipment Corporation.