Software Product Description

PRODUCT NAME: DECmcc Basic Management System, Version 1.1 **SPD 32.48.01**

DESCRIPTION

The DECmcc software implements Digital's Enterprise Management Architecture (EMA) director model, consistent with the ISO/OSI management framework. The DECmcc Basic Management System (BMS) software, initially implemented under the VMS Operating System, allows users to 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." DECmcc BMS 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 BMS 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 BMS software.

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

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 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 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. Most data stored in the MIR is structured according to the EMA Entity Model which is consistent with the ISO/OSI structure of Management Information (SMI).

EXECUTIVE Function Modules

Control FM

The Control FM makes access to primitive directives for observation and control of 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 VAX Distributed Name Service as the DECmcc instance repository. This allows multiple DECmcc systems to share the same view of entity configurations.

Additional Functional Modules

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 as 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 of specific domains and manage the entities that comprise them.

Historian FM

The Historian FM enables users to collect and timestamp entity attribute data. The resulting historical attribute data is available for use by other management modules such as the Performance Analyzer FM. Users can define the data to be collected as well as the collection intervals.

Export FM

The Export FM writes attribute data (historical as well as current) to an RDB database located anywhere in the network. Exported data can be used to generate reports or other administrative applications that require access to a network management data. Included with the Export FM is a set of DATATRIEVE procedures which enable users to generate reports on managed entities.

Performance Analyzer FM

The Performance Analyzer FM calculates statistics for selected DECnet (Phase IV and V) and Bridge entities. These statistics can be used in conjunction with the Alarms FM to set thresholds for triggering alarms as well as for network planning and optimization purposes.

Alarms FM

The Alarms FM provides the ability to notify network managers that alarm conditions have been detected in the network. The DECmcc Alarms FM can detect alarm conditions about any entity that has an appropriate access module. When an alarm condition is detected, a user-written command procedure is queued for execution. The DECmcc Alarms FM includes sample rules for alarm conditions and sample command procedures that can be used directly, e.g., to log, broadcast and mail alarms, or used as examples that can be modified.

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's entity (e.g., line) through its parent (e.g., a DECnet Phase IV Node), or modifying parameters on a remote node.

Ethernet Station AM

The Ethernet Station AM provides looptest and display of generic Ethernet devices that support: MOP REQID, MOP SYSID, MOP Counters, Ethernet V2 LOOPBACK, IEEE802.3 XID, or IEEE802.3 TEST. The Ethernet Station AM also provides Ethernet control and monitoring functions that can be used by other management modules within the DECmcc system.

Bridge AM

The Bridge AM enables users to control and monitor any Digital LAN Bridge 100, 150 or 200 in an extended LAN environment. In addition, this module provides an executable procedure to aid in the populating of the DECmcc software database with information contained in an existing Remote Bridge Management Software (RBMS) database.

Sample AM

A Sample Access Module is included as part of the DECmcc BMS. 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 BMS 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 DECmcc BMS are the Iconic Map and the Forms and Command Line (FCL) PMs. The FCL PM supports two modes of operation, Command Line Mode and Forms Interface Mode.

Iconic Map PM

The Iconic Map presentation module enables users to interface with the DECmcc BMS 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 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 network management commands.

Command-Line Mode is available from any 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 BMS. Documentation required for such module enrollment is supplied by the module developer. The utilities are:

- Dictionary Administrator 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 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 32.48.01-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 32.48.01-x) for required versions of prerequisite/optional software.

ORDERING INFORMATION

Software Licenses: QL-YSUA9-AA
Software Media: QA-YSUAA-H5
Software Documentation: QA-YSUAA-GZ
Software Product Services: QT-YSUA*-**

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

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LICENSE MANAGEMENT FACILITY SUPPORT

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

License units for this product are allocated on 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, contact your local Digital office.

SOFTWARE PRODUCT SERVICES

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- 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.