DECmcc™

Installation

March 1991

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Contents

Preface

DECmcc™ *Installation* describes how to install the DECmcc Director, the DECmcc Basic Management System, the DECmcc Developer's Toolkit, and additional management modules on the VMS operating system.

Intended Audience

This document is designed for anyone who intends to install DECmcc.

Document Structure

This document has the following chapters and appendix:

- **Chapter 1** helps you to prepare your system before you install the software.
- **Chapter 2** directs you to install your DECmcc Basic Management System software.
- **Chapter 3** directs you to install your DECmcc Director software.
- **Chapter 4** directs you to install your DECmcc Developer's Toolkit software.
- **Chapter 5** directs you to install any DECmcc independent management module.
- **Chapter 6** describes preparatory tasks you must perform before you can manage your network.
- **Appendix A** supplies an installation checklist.
- **Appendix B** describes VAX Distributed Name Service directories required by DECmcc.

The postage–prepaid **Reader's Comments** form on the last page of this document requests the user's critical evaluation to assist us in preparing future documentation.

Conventions Used in This Guide

Convention	Meaning
`Special type`	Indicates system output or user input.
`Red type`	In examples, indicates user input.
UPPERCASE	Indicate keywords that must be entered. You can enter them in either uppercase or lowercase. You can abbreviate command keywords to the first three characters or the minimum unique abbreviation.
lowercase italics	In command syntax or examples, indicate variables for which either you or the system supplies a value.
$\boxed{key}$	Indicates that you press the specified key.
$\boxed{\text{CTRL}/x}$	Indicates that you should hold the Ctrl key down and press the key specified by the *x*.
$\boxed{\text{RET}}$	Indicates that you press the Return key.

Associated Documents

Documents that are associated with this release of DECmcc are:

- *DECmcc Introduction*

  Provides an overview of the Digital DECmcc enterprise management products.

- *DECmcc Director Use*

  Describes how to use the presentation modules (user interfaces) and the features of the DECmcc Director software.

- *DECmcc Basic Management System Use*

  Describes how to use the value-added features of the DECmcc Basic Management software.

- *DECmcc DECnet Phase IV Access Module Use*

  Describes how to use DECmcc to manage a DECnet Phase IV network.

- *DECmcc DECnet/OSI Access Module Use*

  Describes how to use DECmcc to manage a DECnet/OSI network.

- *DECmcc Ethernet Access Module Use*

  Describes how to use DECmcc to manage Ethernet stations.

- *DECmcc Bridge Access Module Use*

  Describes how to use DECmcc to manage LAN bridges.

- *DECmcc Alarms Function Module Use*

  Describes how to make effective use of DECmcc Alarms.

- *DECmcc Performance Analyzer Function Module Use*

  Describes how to make effective use of DECmcc Performance Analyzer.

- *DECmcc Messages*

  Describes all DECmcc management module messages for the various interfaces.

- *DECmcc Master Index*

  Combines all DECmcc document indexes.

You can refer to the following documents for further information.

- *DECmcc Release Notes*

  Provides the latest information about the product, a list of new files and logicals, and a sample DECmcc installation.

- *DECmcc Software Product Description*

  Describes software and hardware requirements.

- *VMS DCL Dictionary*

  Describes DCL commands.

- *Guide to VMS Software Installation*

  Provides general installation information.

- *VMS License Management Utility Manual*

  Describes the VMS License Management Utility.

- *VMS Version 5.3 New Features Manual*

  Describes new features incorporated in Version 5.3 of the VMS operating system.

- *VAX Distributed Name Service Installation Guide*

  Describes how to install VAX DNS software.

- *VAX Distributed Name Service Management Guide*

  Describes namespace management.

- *Guide to VMS System Security*

  Describes security management.

- *VMS System Manager's Manual*

  Describes setting recommended user account quotas, privileges and system parameters.

1

Preparing to Install DECmcc

This chapter explains how to prepare your system before you install DECmcc. Topics discussed are:

- Ensuring a Smooth Installation
- You Must Obtain Your Network Address Initial Domain Part
- You Must Meet Software and Hardware Requirements
- Comparing Your System with DECmcc Requirements
- Registering the Licenses for DECmcc
- Reading the On-Line Release Notes
- Determining Your Time Differential Factor
- Deciding Whether to Install the DECmcc Reports Package

Ensuring a Smooth Installation

This section lists several steps that, if done ahead of time, can save you time and ensure a smooth installation.

The following tasks must be completed before you begin software installation:

1. Obtain your network address Initial Domain Part (IDP) from one of the recognized allocation authorities. Refer to “You Must Obtain Your Network Address Initial Domain Part” in this chapter for more discussion of IDPs.
2. Check the distribution kit. Ensure that you have a complete distribution kit by comparing the kit against the bill of materials (BOM). If any part of the kit is missing, contact your Digital representative.
3. Back up the system disk. This installation involves writing to your system disk. You should make a backup copy of your system disk before installing DECmcc.
4. Meet all requirements. Ensure that you obtain all prerequisite software, system privileges, quotas, and disk space before you begin the installation. Refer to “You Must Meet Software and Hardware Requirements” in this chapter for a complete list of requirements for DECmcc.
5. Register and load the licenses for the DECmcc products you wish to install. If you do not register and load the licenses, you can complete the installation procedure; however, DECmcc and the Installation Verification Procedure (IVP) will not run. Refer to “Registering the Licenses for DECmcc” in this chapter to register and load the license for DECmcc.
6. Load the distribution tape into the tape drive; then, mount the distribution tape.
7. Access and read the on-line release notes. They contain the latest information about DECmcc. Refer to “Read the On-Line Release Notes” in this chapter for information on how to access on-line release notes.
8. Decide if you are going to install some files on a disk other than a system disk. The installation procedure allows you to choose a location for the DECmcc common files other than in a directory on the system disk.
9. Calculate your Time Differential Factor (TDF), the constant used to determine the local time. “Determining Your Time Differential Factor” in this chapter discusses and gives examples of TDFs.
10. Decide whether to install the DECmcc Reports package. The installation procedure allows you to choose this option. Refer to “Deciding to Install the DECmcc Reports Package” in this chapter.

Exhibit 1–1: Preinstallation Checklist

Things To Do Before Installation	Done?
Obtain your network IDP	☐
Check distribution kit	☐
Back up system disk	☐
Meet all requirements	☐
Software	☐
Privileges	☐
Quotas	☐
Parameters	☐
Disk space	☐
Register the licenses for the product	☐
Load and mount the distribution tape	☐
Read on-line release notes	☐
Choose a disk for common files	☐
Calculate your TDF	☐

Associated Documents

Document Title	Description of Contents
Bill of Materials (BOM)	Lists all items in the distribution kit
Software Product Description (SPD)	Describes the product generally
System Support Addendum (SSA)	Lists software and hardware requirements and processors supported
Guide to VMS Software Installation	Contains general installation information
VMS System Manager's Manual	Contains information on setting recommended user account quotas, privileges and system parameters
VAX Distributed Name Service Management Guide	Contains information on setting up your DNS namespace.

You Must Obtain Your Network Address Initial Domain Part

If your network is or will be interconnected with other OSI networks, you must obtain a network address Initial Domain Part (IDP) from one of the recognized allocation authorities, such as CCITT.

The installation procedure asks you for your network address IDP. The format of a network address IDP is *AFI*:*IDI*:.

- *AFI* is the Authority and Format Identifier. This is two decimal digits indicating the IDP allocation authority.
- *IDI* is the Initial Domain Identifier. This is a string of decimal digits that the allocation authority allocates specifically for your network.

If you are not sure if your network will be interconnected with other OSI networks in the future, Digital Equipment Corporation highly recommends that you obtain an IDP from one of the recognized allocation authorities. Refer to Exhibit 1–2 for IDP parameter values and sample IDPs. You can obtain your IDP using one of the following two methods:

1. Use an AFI that refers to a telecommunications authority, and construct the IDI part using some number already allocated for that type of telecommunications. Register this IDI value with the appropriate authority.
   - X.121 is the CCITT numbering plan for X.21 and X.25 networks. Construct the IDI from a DTE number you are using.
   - F.69 is the CCITT numbering plan for the telex network. Construct the IDI from a TELEX number you are using.
   - E.163 is the CCITT numbering plan for the telephone network. Construct the IDI from a POTS (telephone network) number you are using.
   - E.164, the CCITT numbering plan to be used for ISDN networks. Construct the IDI from an ISDN number you are using.
2. Go to an ISO geographic or non–geographic IDP allocation authority and ask for a unique IDI. Geographic is for national organizations or networks, Non–geographic is for international organizations such as the UN, the Red Cross, etc.
   - ISO Geographic is an ISO–defined scheme which allows a country to assign addressing domains independently of public networks, according to geographic locations.
   - ISO Non–geographic is an ISO–defined scheme which allows international organizations to assign domains which do not imply the location of systems within the domain.

You can use an IDP of “49::” if your network is not or will never be interconnected with other OSI networks. There is no IDI associated with this AFI.

Exhibit 1–2: IDP Parameter Values

Allocation Authority	Value of AFI	Number of digits in the IDI*	Selection for Leading IDI digit
X.121	37	0 to 14	1–9
	53	0 to 14	0, 2–9
F.69	41	0 to 8	1–9
	55	0 to 8	0, 2–9
E.163	43	0 to 12	1–9
	57	0 to 12	0, 2–9
E.164	45	0 to 15	1–9
	59	0 to 15	0, 2–9
ISO DCC	39	3 (exact)	0–9
ISO 6523–ICD	47	4 (exact)	0–9
Private network	49	0	n/a

*Digits in the IDI must be decimal (0–9)

Sample IDPs

Authority	Sample IDPs
X.121 (37 or 53)	The IDI is comprised of the globally unique address prefix, identifying the Data Network and the Private Network (the company using the address), and one or more addresses within that Private Network. Address prefix identifying the company's subnetwork = 8107654 Address within the company's subnetwork = 1234 Resulting X.121 address = 81076541234 Used as an IDP value = 37:81076541234:
F.69 (41 or 55)	The IDI is comprised of a country–specific or a network–specific number, as defined by CCITT F.69 recommendation, plus the local telex local number. Note that some telex numbers do not conform to the CCITT F.69 recommendation, and should not be used. Country or network number = 45 (Switzerland) Local telex number = 43 61 92 Resulting F.69 number = 45 43 61 92 Used as an IDP value = 41:45436192:
E.163 (43 or 57)	The IDI is comprised of the world zone number, country or geographic area number, and local number. World zone number = 1 (USA) Geographic area number = 508 (MA) Local number = 494–5892 Resulting E.163 address = 15084945892 Used as an IDP value = 43:15084945892:

You Must Meet Software and Hardware Requirements

Ensure that you obtain all prerequisite software, system privileges, quotas, and disk space before you begin to install DECmcc. The Software Product Description (SPD) or the System Support Addendum (SSA) lists the hardware requirements, such as supported processors.

Software requirements can be broken down into two groups, VMS requirements and VMSINSTAL requirements. To install DECmcc, you must meet the following VMS requirements. The SPD or the SSA lists the software version requirements.

- **VMS software requirements**. VMS software is required for installation. You must be running VMS V5.3 or later.
- **VAX Distributed Name Service.** VAX DNS V1.1 or later is required for running DECmcc.
- **DECnet software requirements**. DECnet software is required for installation.

To run VMSINSTAL, you must also meet additional requirements of the following kinds. Exhibit 1–3 lists these requirements.

- **Installation requirements**. These are requirements you must satisfy before you install DECmcc. For example, DECnet must be running.
- **Privilege requirements**. You must have the system manager level privileges necessary to run VMSINSTAL.
- **Quota value requirements**. The installation procedure checks for specific minimum quota values.
- **Disk space requirement**. The installation procedure requires a minimum number of blocks of disk space. The Developer's Tooklit installation requires more blocks if you choose to install the Module Reference Manual (MRM) files supplied with the kit in PostScript and LN03 formats.

  To use less space on your system disk, the installation procedure gives you the option of specifying a directory on a non–system disk for the DECmcc common files.

  You can also use the AWD option to the VMSINSTAL command to specify an alternate working device for the temporary working directory. See the *Guide to VMS Software Installation*. For example:

  ```
  $ @SYS$UPDATE:VMSINSTAL MCCBMSvvu MUA0: OPTIONS N, AWD=DUA2:[INSTALL]
  ```

- **VMS License Management Facility requirements**. Digital strongly recommends that you register and load your Product Authorization Key (PAK) with the License Management Facility (LMF). Refer to "Registering the Licenses for DECmcc" in this chapter for information on registering the license and loading the PAK.

Exhibit 1–3: DECmcc Installation Specifications

Requirements	Specifications
Distribution media	TK50 tape distribution kit
Required software	
for DECmcc Basic Management System or DIRECTOR	VMS V5.3 or later software running DECnet–VAX V5.3 or later software running VAX DNS V1.1 or later software (at run time)
for DECmcc Developer's Toolkit	DECmcc–BMS or DECmcc–DIRECTOR software
Privileges	System manager level
Process quotas	ASTLM = 48 BIOLM = 36 DIOLM = 18 ENQLM = 512 FILLM = 40 PGFLQUO = 30000 PRCLM = 2 TQELM = 128 WSQUO = 2048
Disk space	DECmcc–BMS–70,000 blocks or 20,000 blocks on the system disk and 50,000 blocks on the DECmcc common files disk. DECmcc–DIRECTOR–60,000 blocks or 13,000 blocks on the system disk and 47,000 blocks on the DECmcc common files disk. DECmcc–DEV–TK–7,000 blocks plus 13,000 blocks for PostScript MRM files or 10,000 blocks for LN03 MRM files.
PAK	DECmcc–BMS contains the base system, Bridge and Ethernet AMs, and Alarms, Historian, Performance Analyzer, Exporter, and Notification FMs. DECmcc–DIRECTOR contains the base system. DECmcc–DEV–TK contains MSL and Sample AM source code.
Estimated time to install (approximate times using a TK50 on a MicroVAX II with 14 Mbytes of memory writing to a system disk)	90 minutes for DECmcc–BMS 60 minutes for DECmcc–DIRECTOR 30 minutes for DECmcc–DEV–TK

Comparing Your System with DECmcc Requirements

Verify that your system meets all DECmcc requirements. If your system does not meet or exceed these requirements, you can modify your system before you begin installation.

The installation procedure aborts the installation if you do not meet the requirements specified in Exhibit 1–3. You can save time by verifying that your system meets all these requirements. The procedure below demonstrates how to display your system information. Compare this information with the specifications given in Exhibit 1–3. Refer to the *VMS System Manager's Manual* if you need to modify your system.

1. To verify the VMS software version and to ensure that the correct DNS and DECnet processes are running, enter the following command:

   ```
   $ SHOW SYSTEM
   ```

   The VMS version number displays in the first line. To verify that DNS software is installed and operational, look for the DNS$ADVER process on the client and the DNS$TA and DNS$BACK processes on the server. If these processes are not running, refer to the *VAX Distributed Name Service Installation Guide*. To verify that DECnet software is installed and running, look for the NETACP process.

2. To verify that your process quotas are set correctly, enter the following command:

   ```
   $ RUN SYS$SYSTEM:AUTHORIZE
   UAF> SHOW user_name
   ```

   This command checks for these quotas: ASTLM, BIOLM, DIOLM, ENQLM, FILLM, PGFLQUO, PRCLM, TQELM, and WSQUO.

3. To check the number of available global pages, enter the following command:

   ```
   $ RUN SYS$SYSTEM:INSTALL
   INSTALL> LIST/GLOBAL/SUMMARY
   ```

   This command displays the system global pages summary. The last number of the display shows the number of unused global pages. You need the specified number of unused global pages, unless you are reinstalling DECmcc on a system where it is already utilizing the required resources.

4. To verify that you have adequate disk space on your system disk before you install DECmcc, enter the following command:

   ```
   $ SHOW DEVICES SYS$SYSDEVICE:
   ```

   The number of free blocks displays under the heading Free Blocks.

Exhibit 1–4: Displaying Your System Software, Quotas, and Disk Space

1 Use this command to verify the VMS software version and to ensure that the correct DNS and DECnet processes are running.

```
$ SHOW SYSTEM
VAX/VMS V5.3-1  on node OSLO 24-OCT-1990 14:56:59.41   Uptime 97 22:52:08
  Pid    Process Name    State Pri    I/O      CPU        Page flts  Ph.Mem
20400101 SWAPPER         HIB    16      0 0 00:01:45.54          0       0
20400107 ERRFMT          HIB     8   6293 0 00:00:41.46         82     141
20400108 CACHE_SERVER    HIB    16    154 0 00:00:00.28         63     117
20400109 CLUSTER_SERVER  HIB    10    525 0 00:01:20.77        133     342
2040010A OPCOM           HIB     6  13620 0 00:01:33.63        641     188
2040011E NETACP          HIB    10  26656 0 00:15:45.03      12235    8678
20400126 DNS$ADVER       HIB     5 472759 0 00:51:32.22        197     327
.
.
.
$
```

2 Use this command to verify that your process quotas are set correctly.

```
$ RUN SYS$SYSTEM:AUTHORIZE
UAF> SHOW SYSTEM
.
.
.
Maxjobs:           0   Fillm:           100   Bytlm:         32768
Maxacctjobs:       0   Shrfillm:          0   Pbytlm:            0
Maxdetach:         0   BIOlm:            18   JTquota:        1024
Prclm:            10   DIOlm:            18   WSdef:           256
Prio:              4   ASTlm:            48   WSquo:          2048
Queprio:           0   TQElm:           128   WSextent:       2048
CPU:          (none)   Enqlm:           512   Pgflquo:       30000
.
.
.
UAF>
```

3 Use this command to check the number of available global pages.

```
$ RUN SYS$SYSTEM:INSTALL
INSTALL> LIST/GLOBAL/SUMMARY

                Summary of Local Memory Global Sections
     257 Global Sections Used, 19112/3888 Global Pages Used/Unused
INSTALL>
```

4 Use this command to verify that you have adequate disk space on your system disk before you install DECmcc.

```
$ SHOW DEVICES SYS$SYSDEVICE:
Device                Device         Error    Volume       Free   Trans Mnt
Name                  Status         Count     Label       Blocks Count Cnt
$1$DUA0:    (HSC001)  Mounted            0  SYST419        249090   295   3
$
```

Registering the Licenses for DECmcc

Register and load the DECmcc licenses for each product you wish to install using the VMS License Management Facility (LMF).

Before you install any DECmcc product, register the license and load your PAK using LMF. The PAK contains information about the license. Currently, there are three different PAKs for DECmcc, which are listed below.

- DECmcc–BMS, the DECmcc Basic Management System
- DECmcc–DIRECTOR, the DECmcc Director
- DECmcc–DEV–TK, the DECmcc Developer's Toolkit (requires DECmcc–DIRECTOR or DECmcc–BMS to be installed)

Each installation procedure asks if you registered and loaded the authorization key for the DECmcc product you are installing. Whether you answer YES or NO, the installation procedure checks to verify that the PAK is registered and loaded. If you do not register the license and load the PAK, you can complete the installation procedure; however, DECmcc and the IVP will not run. Once you register the license and load the PAK, DECmcc and the IVP will run properly.

To register the license and load the PAK:

1. Log in to the SYSTEM account.
2. Run the VMS License Management Utility by entering the following command:

   ```
   $ @SYS$UPDATE:VMSLICENSE
   ```

3. Answer all the questions. The PAK provides the product name and information you need to register the license. Enter all information provided by your PAK exactly as specified. Confirm that you want to LOAD the license to activate the database information automatically.

For more information on LMF, refer to the *VMS License Management Utility Manual*.

Exhibit 1–5: Registering Your DECmcc Licenses

```
   VMS License Management Utility Options:

         1. Register a Product Authorization Key
         2. Amend an existing Product Authorization Key
         3. Cancel an existing Product Authorization Key
         4. List Product Authorization Keys
         5. Modify an existing Product Authorization Key

         9. Exit this procedure

   Type '?' at any prompt for a description of the information requested.

Enter one of the above choices [1]: RET
Do you have your Product Authorization Key? [YES]: RET

    The register option allows you to add a new license to a license
    database. A Product Authorization Key (PAK) provides the product
    name and information you need to register the license.  You must
    enter all the information provided by your PAK exactly as specified.

PAK ID:
                              Issuer   [DEC]:RET
                Authorization Number   []: authorization_number

PRODUCT ID:
                        Product Name   []: product_name
                            Producer   [DEC]:RET

NUMBER OF UNITS:
                     Number of Units   []: number_of_units

KEY LEVEL:
                             Version   []: version

KEY TERMINATION DATE:
                Key Termination Date   []: key_termination_date

RATING:
             Availability Table Code   []: availability_table_code
                 Activity Table Code   []: activity_table_code

MISCELLANEOUS:
                         Key Options   []: key_options
                       Product Token   []: product_token
                         Hardware-ID   []: hardware-id
                            Checksum   []: checksum
.
.  (Redisplays all information as you entered it.)
.
Is this information correct? [YES]: RET
Registering product-name license in file-name...
    product-name has been registered.

*Do you want to LOAD this license on this system [YES]? RET
```

Reading the On-Line Release Notes

Access on-line release notes by invoking VMSINSTAL with OPTIONS N. Read the release notes before proceeding further with the installation.

DECmcc provides on-line release notes with each of the three kits. Digital Equipment Corporation recommends that you review the release notes before installing the product. They contain the latest information about the product, such as changes to the installation procedure.

To access on-line release notes:

1. Log in to the SYSTEM account.
2. Invoke VMSINSTAL by entering one of the following commands:

   ```
   $ @SYS$UPDATE:VMSINSTAL MCCBMSvvu ddcn: OPTIONS N
   $ @SYS$UPDATE:VMSINSTAL MCCDIRvvu ddcn: OPTIONS N
   $ @SYS$UPDATE:VMSINSTAL MCCTKvvu ddcn: OPTIONS N
   ```

   Replace *vv* with the major software version number and *u* with the update software version number, such as 011 for Version 1.1.

   Replace *ddcn* with the name of the device on which you plan to mount the media, where *dd* is the device name, *c* is the controller ID, and *n* is the unit number, such as MUA0.

3. If you have any active processes running, the installation procedure lists the active processes and asks if you want to continue. Answer YES to continue.
4. Verify that you are satisfied with the backup copy of your system disk before continuing with the installation.
5. When installing from the distribution media, the installation procedure checks that the device is mounted. Then the installation procedure prompts you to mount the distribution volume, and asks if you are ready to continue the installation.

   The installation procedure displays a message that the media containing DECmcc is mounted on the specified device and that the installation is beginning. The installation procedure indicates what version number of DECmcc it is installing.

6. Select release notes option 2 to print the release notes. The installation procedure prompts you for a print queue name. Enter a queue name or press RET to send the file to the default output print device, SYS$PRINT.
7. The installation procedure then asks you if you want to continue the installation. Answer NO to exit the installation procedure.

Exhibit 1–6: Release Notes Options

```
    Release notes included with this kit are always copied to SYS$HELP.

    Additional Release Notes Options:

         1.  Display release notes
         2.  Print release notes
         3.  Both 1 and 2
         4.  None of the above

* Select option [2]: RET

* Queue name [SYS$PRINT]: RET

* Do you want to continue the installation [NO]? RET
```

Determining Your Time Differential Factor

The DECmcc installation procedures requires that you enter your Time Differential Factor (TDF). Your TDF is the time difference between your time zone and Coordinated Universal Time (UTC).

Your Time Differential Factor (TDF) is the constant (a fixed number of hours and minutes) used to determine the local time. DECmcc calculates the local time by adding the TDF to the Coordinated Universal Time (UTC). The UTC (formerly GMT, Greenwich Mean Time) is centered in Greenwich, England.

By defining your TDF as a logical, DECmcc makes it very easy to change your local time if you change during the spring or summer and change back in the fall or winter. For each time change, just redefine your logical, edit your SYS$STARTUP:MCC_STARTUP_DIR.COM file and re-execute the DECmcc startup procedure.

To calculate your TDF, determine what time zone you are in and calculate the difference between your time zone and the UTC. The range is from –12:00 to +13:00. A negative (–) TDF value means that you are located west of Greenwich, England. A positive (+) TDF value means that you are located east of Greenwich, England. The format is +hh:mm or –hh:mm with hh indicating the number of hours and mm indicating the number of minutes. Examples of different TDFs are shown below:

- –8:00 hours from UTC — California (Pacific Standard Time)
- –6:00 hours from UTC — Oklahoma (Central Standard Time)
- –5:00 hours from UTC — New York (Eastern Standard Time)
- –4:00 hours from UTC — New York (Eastern Daylight Time)
- –5:00 hours from UTC — Ontario, west of longitude W.63 degrees
- –4:00 hours from UTC — Ontario, east of longitude W.63 degrees
- –3:30 hours from UTC — Newfoundland
- 0:0 or at UTC — Great Britain, Iceland, Portugal, Upper Volta
- +1:00 hour from UTC — Great Britain, Summer Time
- +2:00 hours from UTC — Greece
- +5:30 hours from UTC — India
- +7:30 hours from UTC — Singapore
- +9:00 hours from UTC — Japan
- +10:00 hours from UTC — Australian Capital Territory

Exhibit 1–7: Entering Your TDF During the Installation Procedure

```
        The Time Differential Factor (TDF) is the difference between
        your time zone and the international standard Coordinated
        Universal Time (UTC).

        A negative (-) TDF value means that this node is west of UTC.
        A positive (+) TDF value means that this node is east of UTC.

        The range is from -12:00 to +13:00. The format is +hh:mm or
        -hh:mm with hh indicating the number of hours and mm indicating
        the number of minutes. For example:

        California (Pacific Standard Time) is -8:00 hours from UTC.
        Oklahoma (Central Standard Time) is -6:00 hours from UTC.
        Eastern Standard Time is -5:00 hours from UTC.
        Eastern Daylight Time is -4:00 hours from UTC.
        Ontario, west of longitude W.63 degrees is -5:00 hours from UTC.
        Ontario, east of longitude W.63 degrees is -4:00 hours from UTC.
        Newfoundland is -3:30 hours from UTC.
        Great Britain, Iceland, Portugal, Upper Volta are at UTC or 0:0.
        Great Britain, Summer Time is +1:00 hour from UTC.
        Greece is +2:00 hours from UTC.
        India is +5:30 hours from UTC.
        Singapore is +7:30 hours from UTC.
        Japan is +9:00 hours from UTC.
        Australian Capital Territory is +10:00 hours from UTC.

* Time Differential Factor [-4:00]: -6:00 RET
```

Deciding Whether to Install the DECmcc Reports Package

The DECmcc Reports package allows you to use DATATRIEVE to create reports using data exported from the DECmcc Basic Management System. To use the Reports package, you need to have a number of VMS layered products installed.

The DECmcc BMS installation procedure gives you the option of installing the DECmcc Reports package. The Reports package allows you to use DATATRIEVE to create reports with data exported to a VAX Rdb/VMS (RDB) database from DECmcc. Please see the *DECmcc BMS Performance Analyzer Use* manual for information on using the DECmcc Reports package with DATATRIEVE.

Before you can use the Reports package, you must also install the following VMS layered products:

- CDD/Plus V4.2 or higher
- DATATRIEVE V5.0 or higher
- DECgraph V1.5 or higher
- VAX Rdb/VMS V3.1B or higher

Together, these products require about 50K blocks of storage. Please refer to the installation manuals for these products for information on their installation requirements. If you choose to install DECmcc Reports, please make sure you have all the licenses required for these products.

Exhibit 1–8 shows the recommended order of installing the layered products. Between installing RDB and CDD/Plus execute the following command:

```
$ @SYS$STARTUP:RMONSTOP
```

If you choose to install the Reports package, the installation procedure asks you specify a directory for the files. If you select the default, the installation procedure places the Reports files in the subdirectory SYS$COMMON:[MCC.MCC_REPORTS_FILES].

Exhibit 1–8: Installing VMS Layered Products Required by DECmcc Reports

1. Install VAX Rdb/VMS.
2. Execute the SYS$STARTUP:RMONSTOP command procedure.
3. Install CDD/Plus.
4. Install DATATRIEVE.
5. Install DECgraph.

2

Installing and Verifying DECmcc BMS Software

After fulfilling all prerequisites, you are now ready to install DECmcc. If you are installing the DECmcc Basic Management System (BMS) software (which is the DECmcc Director with additional management modules), this chapter details each step of the installation process, as listed below. If you are installing the DECmcc Director or the DECmcc Developer's Toolkit, refer to succeeding chapters for these installation processes.

When you install the DECmcc Basic Management System software, the installation procedure automatically installs the DECmcc Director first, and then installs the additional management modules. Refer to *DECmcc Release Notes* for a sample DECmcc installation and a list of DECmcc BMS files and logicals.

- Invoking VMSINSTAL
- Selecting a Release Notes Option
- Naming a Directory for Common Files
- Entering Your Time Differential Factor
- Supplying Your Network Initial Domain Part and Selecting Reports
- Verifying Registration with the License Management Facility
- Running the Postinstallation Procedure
- Running the Installation Verification Procedure
- Completing the Installation Verification Procedure
- Recovering From Errors During Installation

Invoking VMSINSTAL

Invoke VMSINSTAL, and check your system disk backup. Mount your distribution media and the system begins the installation.

1. Log in to the SYSTEM account.
2. Invoke VMSINSTAL by entering the following command.

   ```
   $ @SYS$UPDATE:VMSINSTAL MCCBMSvvu ddcn: OPTIONS N,AWD=disk:[directory]
   ```

   Replace *vv* with the major software version number and *u* with the update software version number, such as 011 for Version 1.1.

   Replace *ddcn* with the name of the device on which you plan to mount the media, where *dd* is the device name, *c* is the controller ID, and *n* is the unit number, such as MUA0.

   OPTIONS N, AWD are optional parameters. N indicates you want to be prompted to display or print the release notes, or copy them to SYS$HELP. If you do not include the OPTIONS N parameter, the installation procedure does not prompt you to display, print, or copy the release notes. AWD lets you specify an alternate working device for the temporary working directory, thus enabling you to perform an installation with fewer free blocks on the system disk than is otherwise required.

   The system displays a message stating the software installation procedure version it is using and the date and time.

3. Check for active processes.

   If you have any active processes running, the installation procedure lists the active processes and asks if you want to continue.

4. Check your system disk backup.

   Verify that you are satisfied with the backup copy of your system disk before continuing with the installation.

5. Load the distribution tape into the tape drive. Mount your media.

   When installing from the distribution media (not from copied savesets), the installation procedure checks that the device is mounted. Then the installation procedure prompts you to mount the distribution volume, and asks if you are ready to continue the installation.

6. DECmcc installation begins.

   The installation procedure displays a message that the media containing DECmcc is mounted on the specified device and that the installation is beginning. The installation procedure indicates what version number of DECmcc it is installing.

Exhibit 2–1: Log of Steps 1 Through 6

1

```
Username:  SYSTEM RET
Password:             RET
```

2

```
$ @SYS$UPDATE:VMSINSTAL MCCBMS011 MUA0: OPTIONS N,AWD=DUA2:[INSTALL]

        VAX/VMS Software Product Installation Procedure V5.3

It is 24-MAR-1991 at 14:25
Enter a question mark (?) at any time for help.
```

3

```
%VMSINSTAL-W-ACTIVE, The following processes are still active:
        62983_8236
        PARIS_8241
        SERVER_000C
* Do you want to continue anyway [NO]? YES RET
```

4

```
* Are you satisfied with the backup of your system disk [YES]? RET
```

5

```
Please mount the first volume of the set on MUA0:
* Are you ready? YES RET
%MOUNT-I-MOUNTED, MCC mounted on _MUAO:
```

6

```
The following products will be processed:

  MCCBMS V1.1

        Beginning installation of MCCBMS V1.1 at 14:26

%VMSINSTAL-I-RESTORE, Restoring product saveset A ...
```

Selecting a Release Notes Option

Select a release notes option and choose whether or not to continue with the installation.

7. Select a release notes option.

   If you specified OPTION N when you invoked VMSINSTAL, the installation procedure prompts you for a release notes option. These options are described below.

   - If you select option 1 or 3, the installation procedure displays the release notes immediately on your terminal. You can terminate the display at any time by pressing CTRL/C.
   - If you select option 2 or 3, the installation procedure prompts you for a print queue name. Enter a queue name or press RET to send the file to the default output print device, SYS$PRINT.
   - If you select option 4, the installation procedure does not display or print the release notes; however, it does automatically copy them to SYS$HELP.

   No matter which option you select, the installation procedure then asks you if you want to continue the installation. Answer YES to continue or NO to exit the installation procedure.

   The installation procedure copies the release notes to SYS$HELP. Then it verifies that all required quotas are met and the correct version of VMS is installed. Refer to "Recovering From Errors During Installation" later in this chapter for the exact text of messages that display if any of these requirements are deficient.

Exhibit 2–2: Log of Step 7

7

```
        Release notes included with this kit are always copied to SYS$HELP.

        Additional Release Notes Options:
            1. Display release notes
            2. Print release notes
            3. Both 1 and 2
            4. None of the above
    * Select option [2]: RET
    * Queue name [SYS$PRINT]: RET
    * Do you want to continue the installation [NO]? YES RET
    %VMSINSTAL-I-RELMOVED, The product's release notes have been successfully moved
    to SYS$HELP.
    ***********************************************************************
    *                          DECmcc BMS V1.1                             *
    *                        Integrated Package                            *
    *                                                                      *
    *                      Installation Procedure                          *
    *                                                                      *
    ***********************************************************************
    %VMSINSTAL-I-RESTORE, Restoring product saveset B ...
```

Naming a Directory for Common Files

Select a directory for DECmcc common files. Choose to run the Installation Verification Procedure (IVP) automatically and to purge old files.

8. Select a directory for system common files.

   The installation procedure allows you to select an alternate location for all files that would normally be installed in SYS$COMMON:[MCC]. If you do not enter an alternate directory specification, the files are installed on the system disk.

9. Choose to run the DECmcc BMS IVP.

   The installation procedure asks if you want to automatically run the DECmcc BMS IVP at the end of the installation. The IVP for DECmcc BMS ensures that the installation is successful. You should run the IVP immediately after installation.

   If you did not register and load the PAK for DECmcc BMS, the installation procedure will not run the IVP. Refer to “Recovering From Errors During Installation” later in this chapter for the exact text of the message that displays if any of the PAKs are missing.

10. Prepare individual nodes in a cluster.

    The installation procedure then creates a system-specific directory on the node from which you are installing DECmcc. If you are performing a cluster installation, you must prepare the system–specific roots on individual nodes. Refer to “Running DECmcc in a Cluster Environment” in Chapter 6 for more information. If the system-specific directory already exists, these messages do not display.

11. Choose to purge files from previous versions of DECmcc.

    You have the option to purge files from previous versions of DECmcc that are superseded by this installation. Purging is recommended because it will save disk space.

    The installation procedure verifies that sufficient disk space exist. Refer to “Recovering From Errors During Installation” later in this chapter for the exact text of the message that displays if disk space is deficient.

Exhibit 2–3: Log of Steps 8 through 11

8

```
    DECmcc requires a directory where the DECmcc common files
    will be installed.  If the logical MCC_COMMON is defined, the
    default is for the files to be installed in that directory.
    If the logical is not defined, the default is for the files
    to be installed in a directory on the system disk called
    SYS$COMMON:[MCC].  The installer may override the default.
    The target directory for the files as it is now defined is
    shown below.

    Press RETURN to use the value shown or enter a new disk and
    directory specification.

* Target directory for DECmcc Common files [SYS$COMMON:[MCC]]: RET
```

9

```
* Do you want to run the DECmcc BMS IVP after the installation [YES]? RET
%VMSINSTAL-I-SYSDIR, This product creates system directory [MCC].
%VMSINSTAL-I-SYSDIR, This product creates system specific directory [MCC].
```

10

```
    If you intend to execute this layered product on other
    nodes in your VAXcluster, and you have the appropriate
    software license, you must prepare the system-specific
    roots on the other nodes by issuing the following command
    on each node (using a suitably privileged account):

    $ CREATE /DIRECTORY SYS$SPECIFIC:[MCC]/OWNER_UIC=PARENT -
      /PROT=(S:RWE,O:RWE,G:RE,W:R)

%VMSINSTAL-I-SYSDIR, This product creates system directory [SYSTEST.MCC].
%VMSINSTAL-I-SYSDIR, This product creates system directory [SYSHLP.EXAMPLES.MCC].
```

11

```
* Do you want to purge files replaced by this installation [YES]? RET
```

Entering Your Time Differential Factor

Now you enter your Time Differential Factor (TDF) so that DECmcc can determine your local time. The installation procedure uses this TDF for the DECmcc Basic Management System startup procedure.

12. Enter your Time Differential Factor (TDF).

    The Time Differential Factor (TDF) is the constant (a fixed number of hours and minutes) used to determine the local time. DECmcc calculates the local time by adding the TDF to the Coordinated Universal Time (UTC). To calculate your TDF, determine what time zone you are in and calculate the difference between your time zone and the UTC. The installation procedure provides you with examples of TDFs.

    The TDF you specify defines the logical MCC_TDF in the file SYS$STARTUP:MCC_LOGICAL_DIR.COM. If you change time during the spring or summer and change back in the fall or winter, you must edit that file to redefine MCC_TDF and reexecute the DECmcc startup procedure for each time change.

Exhibit 2–4: Log of Step 12

12

```
The Time Differential Factor (TDF) is the difference between
your time zone and the international standard Coordinated
Universal Time (UTC).

A negative (-) TDF value means that this node is west of UTC.
A positive (+) TDF value means that this node is east of UTC.

The range is from -12:00 to +13:00. The format is +hh:mm or
-hh:mm with hh indicating the number of hours and mm
indicating the number of minutes. For example:

California (Pacific Standard Time) is -8:00 hours from UTC.
Oklahoma (Central Standard Time) is -6:00 hours from UTC.
Eastern Standard Time is -5:00 hours from UTC.
Eastern Daylight Time is -4:00 hours from UTC.
Ontario, west of longitude W.63 degrees is -5:00 hours from UTC.
Ontario, east of longitude W.63 degrees is -4:00 hours from UTC.
Newfoundland is -3:30 hours from UTC.
Great Britain, Iceland, Portugal, Upper Volta are at UTC or 0:0.
Great Britain, Summer Time is +1:00 hour from UTC.
Greece is +2:00 hours from UTC.
India is +5:30 hours from UTC.
Singapore is +7:30 hours from UTC.
Japan is +9:00 hours from UTC.
Australian Capital Territory is +10:00 hours from UTC.

* Time Differential Factor [-4:00]: -6:00 RET
```

Supplying Your Network Initial Domain Part and Selecting Reports

The installation procedure prompts for your network address Initial Domain Part. The installation procedure uses this IDP for the DECmcc Basic Management System startup procedure. The procedure then asks whether to install the DECmcc Reports package.

13. Enter your network address Initial Domain Part.

    If your network is or will be interconnected to other OSI networks, you must obtain an IDP for your network from one of the recognized allocation authorities, such as CCITT. If your network will not ever be interconnected with other OSI networks, you can use the default value of “49::”.

14. Specify whether you want to install the DECmcc Reports package.

    The DECmcc Reports package allows you to use DATATRIEVE to create reports with data exported to a VAX Rdb/VMS database from DECmcc. Please see “Deciding Whether to Install the DECmcc Reports Package” in Chapter 1.

    If you choose to install the Reports package, the installation procedure asks you specify a directory for the files.

If you choose to install the Reports package, the installation procedure asks you specify a directory for the files. If you select the default, the installation procedure places the Reports files in the subdirectory SYS$COMMON:[MCC.MCC_REPORTS_FILES].

The directory you select defines the logical name MCC_REPORTS_FILES. When you want to move the reports files to another directory, edit the file SYS$STARTUP:MCC_LOGICAL_BMS.COM to redefine that logical name.

Exhibit 2–5: Log of Steps 13 and 14

13

```
    You must specify the IDP (or network address initial domain
    part) for your network.  This must either be the default
    value of "49::", or a value explicitly allocated for your
    network by one of the recognized allocation authorities.

    The format is:
           afi:idi:
    where:

    afi =  The "authority and format identifier."  This is two
           decimal digits indicating the IDP allocation
           authority.

    idi =  The "initial domain identifier."  This is a string of
           decimal digits that has been allocated specifically
           for your network.

    An IDP of "49::" can be used if your network will not be
    interconnected with other OSI networks (there is no "idi"
    associated with this "afi").


* Initial Domain Part  [49::]: 43:123456: RET
```

14

```
    The DECmcc Reports package consists of files that allow you
    to use DATATRIEVE to create reports using data exported from
    DECmcc.  Please see the Reports package section of the
    DECmcc Performance Analyzer Use manual for information
    on using the DECmcc Reports package with DATATRIEVE.

    The Reports package requires value blocks.

* Do you want to install the DECmcc Reports Package [No]? YES RET

* Target directory for DECmcc Reports files  [SYS$COMMON:[MCC]]: RET
```

Verifying Registration with the License Management Facility

Verify that you registered DECmcc with the License Management Facility. Remember to add a command invoking the DECmcc Basic Management System (BMS) to your system startup command procedure.

15. Verify that you registered and loaded the product licenses with the License Management Facility.

    The installation procedure prints out information about your particular DECmcc licenses and asks if you have registered and loaded your PAKs. If you registered and loaded your PAKs, answer YES to these questions. If you did not register and load your PAKs, answer NO. The installation procedure reminds you to register and load the PAKs before you run the product.

    The installation procedure notifies you that the DECmcc BMS startup procedure will be invoked after the files are copied. This startup procedure prepares your system to run DECmcc BMS. It creates operational tables and files that DECmcc needs to run properly.

16. Add a command invoking DECmcc Basic Management System to your system startup command procedure.

    The installation procedure then directs you to modify your local system startup command procedure to automatically set up DECmcc BMS. Refer to “Modifying Your Local System Startup Procedure” in Chapter 6 for more information on how to modify your system startup command procedure.

Exhibit 2–6: Log of Steps 15 and 16

15

```
        Product:            DECMCC-BMS
        Producer:           DEC
        Version:            1.1
        Release Date:       dd-mm-yyyy

* Does this product have an authorization key registered and loaded? YES RET

        VMSINSTAL asks no additional questions.

%VMSINSTAL-I-RESTORE, Restoring product saveset C ...

%VMSINSTAL-I-RESTORE, Restoring product saveset D ...


    Following the copying of the files, the DECmcc BMS startup
    command procedure(s) will be invoked. Operational tables
    will be created by this procedure.
```

16

```
    To automatically set up DECmcc BMS on your system,
    edit your local system start-up command procedure

           SYS$MANAGER:SYSTARTUP_V5.COM

    so that it invokes the DECmcc BMS start-up command
    procedure.  Add:

           @SYS$STARTUP:MCC_STARTUP_BMS.COM

    after the statement that invokes the DECnet start-up
    command file (STARTNET.COM).

 NOTE: If you have previously installed the DECmcc DIRECTOR
      on this system, you should REMOVE the line:

          @SYS$STARTUP:MCC_STARTUP_DIR.COM

      from your SYS$MANAGER:SYSTARTUP_V5.COM procedure.

NOTE:  The DECdns clerk must be started up before
       the MCC_STARTUP_BMS command procedure is invoked.

    Following the DECmcc BMS start-up the DECmcc BMS
    postinstallation command procedure will be invoked.

%VMSINSTAL-I-MOVEFILES, Files will now be moved to their target directories...
```

Running the Postinstallation Procedure

The installation procedure runs postinstallation procedure for DECmcc BMS.

17. The installation procedure runs the DECmcc Basic Management System postinstallation procedure. The postinstallation procedure for DECmcc BMS creates and deletes an alarm rule.

Exhibit 2–7: Log of Step 17

17

```
     Beginning DECmcc BMS Postinstallation Procedure ...

     Deleting obsolete DECmcc verbs ...


The MCC_STARTUP_BMS procedure for DECmcc V1.1 is now running.

DECmcc (V1.1)

MCC 0 ALARMS RULE __DUMMY_TEST
AT 24-MAR-1991 15:09:52
Entity created successfully.

MCC 0 ALARMS RULE __DUMMY_TEST
AT 24-MAR-1991 15:10:15
Entity deleted successfully.

The MCC_STARTUP_BMS procedure for DECmcc V1.1 is now ending.

     Completing DECmcc BMS Postinstallation Procedure ...
```

Running the Installation Verification Procedure

The installation procedure automatically runs the IVP for the DECmcc Basic Management System. Then the installation procedure completes the installation.

18. The installation procedure runs the IVP.

    If you answered YES to the IVP question, the installation procedure automatically runs an IVP for each product you chose to install that has a PAK registered and loaded.

Exhibit 2–8: Log of Step 18

18

```
        Beginning DECmcc BMS Installation Verification Procedure ...

    The IVP for DECmcc BMS will now be run.

DECmcc (V1.1)

MCC 0
AT 24-MAR-1991 15:19:10

Test Successful

DECmcc (V1.1)

MCC 0 FCL
AT 24-MAR-1991 15:19:31

Test Successful

DECmcc (V1.1)

MCC 0 CONFIG_FM
AT 24-MAR-1991 15:19:52

Test Successful

DECmcc (V1.1)

MCC 0 CONTROL_FM
AT 24-MAR-1991 15:20:13

Test Successful

DECmcc (V1.1)

MCC 0 DNA4_AM
AT 24-MAR-1991 15:20:36

Test Successful

DECmcc (V1.1)

MCC 0 DNA5_AM
AT 24-MAR-1991 15:21:00

Test Successful

DECmcc (V1.1)

MCC 0 ICONICMAP
AT 24-MAR-1991 15:21:13

Test Successful

DECmcc (V1.1)

MCC 0 DOMAIN_FM
AT 24-MAR-1991 15:21:36

Test Successful
```

Completing the Installation Verification Procedure

When the IVP for the DECmcc Basic Management System finishes, the installation is complete.

The IVP runs a test for each of the following DECmcc BMS components:

MCC
Forms and Command Line PM (FCL)
Registration FM (CONFIG_FM)
Control FM (CONTROL_FM)
DECnet Phase IV AM (DNA4_AM)
DECnet/OSI Phase V AM (DNA5_AM)
Iconic Map (ICONICMAP)
Domain FM (DOMAIN_FM)
Sample AM (SAMPLE_AM)
Alarms FM (ALARMS)
Bridge AM (BRIDGE_AM)
Ethernet AM (ETHERNET_AM)
Historian FM (HISTORIAN_FM)
Performance Analyzer FM (PA)
Exporter FM (EXPORTER_FM)
Notification FM (NOTIFICATION_FM)

Exhibit 2–9: Log of Step 18 Continued

18

```
DECmcc (V1.1)

MCC 0 SAMPLE_AM
AT 24-MAR-1991 15:22:00

Test Successful

DECmcc (V1.1)

MCC 0 ALARMS
AT 24-MAR-1991 15:22:21

Test Successful.

DECmcc (V1.1)
MCC 0 BRIDGE_AM
AT 24-MAR-1991 15:22:43
Test Successful.

DECmcc (V1.1)
MCC 0 ETHERNET_AM
AT 24-MAR-1991 15:23:04
Test Successful.

DECmcc (V1.1.0)

MCC 0 HISTORIAN_FM
AT 15-JAN-1991 15:22:22

Test Successful

DECmcc (V1.1.0)

MCC 0 PA
AT 15-JAN-1991 15:22:50

MCC PA Test Successful

DECmcc (V1.1.0)

MCC 0 EXPORTER_FM
AT 15-JAN-1991 15:23:16

Test Successful

MCC 0 NOTIFICATION_FM
AT 15-JAN-1991 15:23:39

Test Successful

    DECmcc BMS V1.1 Installation Successful

    Completing DECmcc BMS Installation Verification Procedure ...

           Installation of MCCBMS V1.1 completed at 15:23

           VMSINSTALL procedure done at 15:23

$
```

Recovering From Errors During Installation

A few errors can occur that cause the system to abort the installation. Recover from these errors by carrying out VMS recovery procedures or ensuring that all prerequisites are met.

Errors that can occur are listed below. Some of these errors occur because you did not obtain all the prerequisites for DECmcc. Refer to “Software and Hardware Requirements” in Chapter 1 for product requirements.

- If you do not meet the following requirements, the installation procedure aborts the installation.
  - All required quotas must be met.
  - Sufficient free global pages must exist.
  - The correct version of VMS software must be installed.
  - Sufficient blocks of disk space must be available.
- If you did not register and load your license for DECmcc, the installation completes successfully. However, DECmcc and the IVP will not run until you register and load your license.

For descriptions of the error messages generated, refer to the VMS documentation on system messages, recovery procedures, and VMS software installation. Take the appropriate action described in the message.

In case of a system failure, follow standard VMS procedure. After restoring the system, begin the installation procedure again.

Exhibit 2–10: Sample Error Messages

1

```
Quota-name quota is: value; must be value or higher to run MCC.
Your account quotas are too low to run the DECmcc BMS startup
and IVP procedures.
```

2

```
This node has value free global pages/value free, contiguous global
pages. DECmcc requires value free global pages for installing shared
images.

This node requires value additional global pages unless this product is
already installed and currently utilizing the required resources.

Please consult the VMS System Generation Utility Reference Manual for
information regarding the global pages system parameter, as well as for
instructions regarding how to modify the global pages system parameter.

* Do you want to continue [NO]?
```

3

```
This kit requires VAX/VMS V5.3 or later to install.
```

4

```
This kit requires at least value blocks to restore the initial saveset.
This kit requires at least value blocks to install.
This kit requires at least value blocks on the system disk. With
   the AWD option, value blocks are required and value blocks
   are required on the AWD disk.
This kit requires at least value blocks on location to install.
```

5

```
%LICENSE-F-NOLICENSE, no license is active for this software product.

It is recommended that the product startup command procedure be run
after the license has been installed.

NOTE:  The DECdns clerk must be started up before the MCC_STARTUP_BMS
       command procedure is invoked.

It is recommended that the product IVP be run after the license has
been installed.
```

3

Installing and Verifying DECmcc Director Software

After fulfilling all prerequisites, you are now ready to install DECmcc. If you are installing the DECmcc Director software, this chapter details each step of the installation process, as listed below. If you are installing the DECmcc Basic Management System software, refer to the previous chapter; if you are installing the DECmcc Developer's Toolkit software, refer to the succeeding chapter.

If you already installed the DECmcc Basic Management System software, you do not need to install the DECmcc Director software. Refer to *DECmcc Release Notes* for a sample DECmcc installation and a list of DECmcc Director files and logicals.

- Invoking VMSINSTAL
- Selecting a Release Notes Option
- Naming a Directory for Common Files
- Entering Your Time Differential Factor
- Supplying Your Network Address Initial Domain Part
- Verifying Registration with the License Management Facility
- Running the Postinstallation Procedure
- Running the Installation Verification Procedure
- Recovering From Errors During Installation

Invoking VMSINSTAL

Invoke VMSINSTAL, and check your system disk backup. Mount your distribution media and the system begins the installation.

1. Log in to the SYSTEM account.
2. Invoke VMSINSTAL by entering the following command.

   ```
   $ @SYS$UPDATE:VMSINSTAL MCCDIRvvu ddcn: OPTIONS N,AWD=disk:[directory]
   ```

   Replace *vv* with the major software version number and *u* with the update software version number, such as 011 for Version 1.1.

   Replace *ddcn* with the name of the device on which you plan to mount the media, where *dd* is the device name, *c* is the controller ID, and *n* is the unit number, such as MUA0.

   OPTIONS N, AWD are optional parameters. N indicates you want to be prompted to display or print the release notes, or copy them to SYS$HELP. If you do not include the OPTIONS N parameter, the installation procedure does not prompt you to display, print, or copy the release notes. AWD lets you specify an alternate working device for the temporary working directory, thus enabling you to perform an installation with fewer free blocks on the system disk than is otherwise required.

   The system displays a message stating the software installation procedure version it is using and the date and time.

3. Check for active processes.

   If you have any active processes running, the installation procedure lists the active processes and asks if you want to continue.

4. Check your system disk backup.

   Verify that you are satisfied with the backup copy of your system disk before continuing with the installation.

5. Load the distribution tape into the tape drive. Mount your media.

   When installing from the distribution media (not from copied savesets), the installation procedure checks that the device is mounted. Then the installation procedure prompts you to mount the distribution volume, and asks if you are ready to continue the installation.

6. DECmcc installation begins.

   The installation procedure displays a message that the media containing DECmcc is mounted on the specified device and that the installation is beginning. The installation procedure indicates what version number of DECmcc it is installing.

Exhibit 3–1: Log of Steps 1 Through 6

1

```
Username:  SYSTEM RET
Password:                  RET
```

2

```
$ @SYS$UPDATE:VMSINSTAL MCCDIR011 MUA0: OPTIONS N,AWD=DUA2:[INSTALL]

        VAX/VMS Software Product Installation Procedure V5.3

It is 24-MAR-1991 at 10:50
Enter a question mark (?) at any time for help.
```

3

```
%VMSINSTAL-W-ACTIVE, The following processes are still active:
           62893_8236
           PARIS_8241
           SERVER_000C
* Do you want to continue anyway [NO]? YES RET
```

4

```
* Are you satisfied with the backup of your system disk [YES]? RET
```

5

```
Please mount the first volume of the set on MUA0:
* Are you ready? YES RET
%MOUNT-I-MOUNTED, MCC mounted on _MUAO:
```

6

```
The following products will be processed:

  MCCDIR V1.1

        Beginning installation of MCCDIR V1.1 at 10:52

%VMSINSTAL-I-RESTORE, Restoring product saveset A ...
```

Selecting a Release Notes Option

Select a release notes option and choose whether or not to continue with the installation.

7. Select a release notes option.

   If you specified OPTION N when you invoked VMSINSTAL, the installation procedure prompts you for a release notes option. These options are described below.

   - If you select option 1 or 3, the installation procedure displays the release notes immediately on your terminal. You can terminate the display at any time by pressing CTRL/C.
   - If you select option 2 or 3, the installation procedure prompts you for a print queue name. Enter a queue name or press RET to send the file to the default output print device, SYS$PRINT.
   - If you select option 4, the installation procedure does not display or print the release notes; however, it does automatically copy them to SYS$HELP.

   No matter which option you select, the installation procedure then asks you if you want to continue the installation. Answer YES to continue or NO to exit the installation procedure.

   The installation procedure copies the release notes to SYS$HELP. Then it verifies that all required quotas are met and the correct version of VMS is installed. Refer to “Recovering From Errors During Installation” later in this chapter for the exact text of messages that display if any of these requirements are deficient.

Exhibit 3–2: Log of Step 7

7

```
    Release notes included with this kit are always copied to SYS$HELP.
    Additional Release Notes Options:
        1. Display release notes
        2. Print release notes
        3. Both 1 and 2
        4. None of the above

* Select option [2]: RET
* Queue name [SYS$PRINT]: RET
* Do you want to continue the installation [NO]? YES RET
%VMSINSTAL-I-RELMOVED, The product's release notes have been successfully moved
to SYS$HELP.
************************************************************************
*                       DECmcc DIRECTOR V1.1                          *
*                       Integrated Package                            *
*                                                                     *
*                     Installation Procedure                          *
*                                                                     *
************************************************************************
```

Naming a Directory for Common Files

Select a directory for DECmcc common files. Choose to run the Installation Verification Procedure (IVP) automatically and then purge old files.

8. Select a directory for system common files.

   The installation procedure allows you to select an alternate location for all files that would normally be installed in SYS$COMMON:[MCC]. If you do not enter an alternate directory specification, the files are installed on the system disk.

9. Prepare individual nodes in a cluster.

   The installation procedure then creates a system directory on the node from which you are installing DECmcc. If you are performing a cluster installation, you must prepare the system–specific roots on individual nodes. Refer to “Running DECmcc in a Cluster Environment” in Chapter 6 for more information on cluster environments.

10. Choose to run the IVP.

    The installation procedure asks if you want to automatically run the IVP at the end of the installation. The IVP for DECmcc ensures that the installation is successful. You should run the IVP immediately after installation.

    If you did not register and load the PAK for the DECmcc Director, the installation procedure will not run the IVP. Refer to “Recovering From Errors During Installation” later in this chapter for the exact text of the message that displays if any of the PAKs are missing.

11. Choose to purge files from previous versions of DECmcc.

    You have the option to purge files from previous versions of DECmcc that are superseded by this installation. Purging is recommended because it will save disk space.

    The installation procedure verifies that sufficient disk space exist. Refer to “Recovering From Errors During Installation” later in this chapter for the exact text of the message that displays if disk space is deficient.

Exhibit 3–3: Log of Steps 8 through 11

8

```
    DECmcc requires a directory where the DECmcc common files
    will be installed.  If the logical MCC_COMMON is defined, the
    default is for the files to be installed in that directory.
    If the logical is not defined, the default is for the files
    to be installed in a directory on the system disk called
    SYS$COMMON:[MCC].  The installer can override the default.
    The target directory for the files as it is now defined is
    shown below.

    Press RETURN to use the value shown or enter a new disk and
    directory specification.

* Target directory for DECmcc Common files [SYS$COMMON:[MCC]]: RET

%VMSINSTAL-I-SYSDIR, This product creates system directory [MCC].
%VMSINSTAL-I-SYSDIR, This product creates system specific directory [MCC].
```

9

```
    If you intend to execute this layered product on other
    nodes in your VAXcluster, and you have the appropriate
    software license, you must prepare the system-specific
    roots on the other nodes by issuing the following command
    on each node (using a suitably privileged account):

    $ CREATE /DIRECTORY SYS$SPECIFIC:[MCC]/OWNER_UIC=PARENT -
      /PROT=(S:RWE,O:RWE,G:RE,W:R)

%VMSINSTAL-I-SYSDIR, This product creates system directory [SYSTEST.MCC].
%VMSINSTAL-I-SYSDIR, This product creates system directory [SYSHLP.EXAMPLES.MCC].
```

10

```
*Do you want to run the DECmcc DIRECTOR IVP after the installation [YES]? RET
```

11

```
* Do you want to purge files replaced by this installation [YES]? RET
```

Entering Your Time Differential Factor

Now you enter your Time Differential Factor (TDF) so that DECmcc can determine your local time. The installation procedure uses this TDF for the DECmcc Director startup procedure. Enter this same TDF in the DECmcc Director startup procedure so that DECmcc can determine your local time at system reboot.

12. Enter your Time Differential Factor (TDF).

    The Time Differential Factor (TDF) is the constant (a fixed number of hours and minutes) used to determine the local time. DECmcc calculates the local time by adding the TDF to the Coordinated Universal Time (UTC). To calculate your TDF, determine what time zone you are in and calculate the difference between your time zone and the UTC. The installation procedure provides you with examples of TDFs.

    The TDF you specify defines the logical MCC_TDF in the file SYS$STARTUP:MCC_LOGICAL_DIR.COM. If you change time during the spring or summer and change back in the fall or winter, you must edit that file to redefine MCC_TDF and reexecute the DECmcc startup procedure for each time change.

Exhibit 3–4: Log of Step 12

12

```
        The Time Differential Factor (TDF) is the difference between
        your time zone and the international standard Coordinated
        Universal Time (UTC).

        A negative (-) TDF value means that this node is west of UTC.
        A positive (+) TDF value means that this node is east of UTC.

        The range is from -12:00 to +13:00. The format is +hh:mm or
        -hh:mm with hh indicating the number of hours and mm indicating
        the number of minutes. For example:

        California (Pacific Standard Time) is -8:00 hours from UTC.
        Oklahoma (Central Standard Time) is -6:00 hours from UTC.
        Eastern Standard Time is -5:00 hours from UTC.
        Eastern Daylight Time is -4:00 hours from UTC.
        Ontario, west of longitude W.63 degrees is -5:00 hours from UTC.
        Ontario, east of longitude W.63 degrees is -4:00 hours from UTC.
        Newfoundland is -3:30 hours from UTC.
        Great Britain, Iceland, Portugal, Upper Volta are at UTC or 0:0.
        Great Britain, Summer Time is +1:00 hour from UTC.
        Greece is +2:00 hours from UTC.
        India is +5:30 hours from UTC.
        Singapore is +7:30 hours from UTC.
        Japan is +9:00 hours from UTC.
        Australian Capital Territory is +10:00 hours from UTC.

    * Time Differential Factor [-4:00]: -6:00 RET
```

Supplying Your Network Address Initial Domain Part

The installation procedure prompts for your network address Initial Domain Part. The installation procedure uses this IDP for the DECmcc Director startup procedure.

13. Enter your network address Initial Domain Part.

    If your network is or will be interconnected to other OSI networks, you must obtain an IDP for your network from one of the recognized allocation authorities, such as CCITT. If your network will not ever be interconnected with other OSI networks, you can use the default value of “49::”.

Exhibit 3–5: Log of Step 13

```
(13)
        You must specify the IDP (or network address initial domain
        part) for your network.  This must either be the default
        value of "49::", or a value explicitly allocated for your
        network by one of the recognized allocation authorities.

        The format is:
            afi:idi:
        where:

        afi =  The "authority and format identifier."  This is two
            decimal digits indicating the IDP allocation
            authority.

        idi =  The "initial domain identifier."  This is a string of
            decimal digits that has been allocated specifically
            for your network.

        An IDP of "49::" can be used if your network will not be
        interconnected with other OSI networks (there is no "idi"
        associated with this "afi").


    * Initial Domain Part  [49::]: 43:123456: RET
```

Verifying Registration with the License Management Facility

Verify that you registered DECmcc with the License Management Facility. Remember to add a command invoking DECmcc Director to your system startup command procedure.

14. Verify that you registered and loaded the product licenses with the License Management Facility.

    The installation procedure prints out information about your particular DECmcc licenses and asks if you have registered and loaded your PAKs. If you registered and loaded your PAKs, answer YES to this question. If you did not register and load your PAKs, answer NO. The installation procedure reminds you to register and load the PAKs before you run the product.

    The installation procedure notifies you that the DECmcc Director startup procedure will be invoked after the files are copied. This startup procedure prepares your system to run the DECmcc Director. It creates operational tables and files that DECmcc needs to run properly.

15. Add a command invoking DECmcc Director to your system startup command procedure.

    The installation procedure then directs you to modify your local system startup command procedure to automatically set up the DECmcc Director. After the installation procedure completes, refer to "Modifying Your Local System Startup Procedure" in Chapter 6 for more information on how to modify your system startup command procedure.

Exhibit 3–6: Log of Steps 14 and 15

14

```
          Product:       DECMCC-DIRECTOR
          Producer:      DEC
          Version:       1.1
          Release Date:  dd-mm-yyyy

* Does this product have an authorization key registered and loaded? YES RET

    VMSINSTAL asks no additional questions.


%VMSINSTAL-I-RESTORE, Restoring product saveset B ...

    Following the copying of the files, the DECmcc DIRECTOR
    startup command procedure(s) will be invoked. Operational
    tables will be created by this procedure.
```

15

```
    To automatically set up DECmcc DIRECTOR on your system,
    edit your local system start-up command procedure

           SYS$MANAGER:SYSTARTUP_V5.COM

    so that it invokes the DECmcc DIRECTOR start-up command
    procedure.  Add:

           @SYS$STARTUP:MCC_STARTUP_DIR.COM

    after the statement that invokes the DECnet start-up
    command file (STARTNET.COM).

NOTE:   The DECdns clerk must be started up before
        the MCC_STARTUP_DIR command procedure is invoked.

    Following the DECmcc DIRECTOR start-up the DECmcc DIRECTOR
    postinstallation command procedure will be invoked.

%VMSINSTAL-I-MOVEFILES, Files will now be moved to their target directories ...
```

Running the Postinstallation Procedure

The installation procedure runs a postinstallation procedure for the DECmcc Director.

16. The installation procedure runs the DECmcc Director postinstallation procedure. The postinstallation procedure performs a test on DECmcc.

Exhibit 3–7: Log of Step 16

16

```
    Beginning DECmcc DIRECTOR Postinstallation Procedure ...

    Deleting obsolete DECmcc verbs ...

    Creating DECmcc Global Entity Instance(s) ...

The MCC_STARTUP_DIR procedure for DECmcc V1.1 is now running.

DECmcc (V1.1)
MCC 0
AT 24-MAR-1991 11:22:29
Test Successful

The MCC_STARTUP_DIR procedure for DECmcc V1.1 is now ending.

    Completing DECmcc DIRECTOR Postinstallation Procedure ...
```

Running the Installation Verification Procedure

The installation procedure automatically runs the IVP for the DECmcc Director and completes the installation.

17. The installation procedure runs the IVP.

    If you answered YES to the IVP question, the installation procedure automatically runs an IVP for the DECmcc Director if it has a PAK registered and loaded.

    The components of the DECmcc Director are listed below.

    MCC
    Forms and Command Line PM (FCL)
    Registration FM (CONFIG_FM)
    Control FM (CONTROL_FM)
    DECnet Phase IV AM (DNA4_AM)
    DECnet/OSI Phase V AM (DNA5_AM)
    Iconic Map (ICONICMAP)
    Domain FM (DOMAIN_FM)
    Sample AM (SAMPLE_AM)

Exhibit 3–8: Log of Step 17

17

```
    Beginning DECmcc DIR Installation Verification Procedure ...

    The IVP for DECmcc DIRECTOR will now be run.

DECmcc (V1.1)
MCC 0
AT 24-MAR-1991 11:32:10
Test Successful

DECmcc (V1.1)
MCC 0 FCL
AT 24-MAR-1991 11:32:31
Test Successful

DECmcc (V1.1)
MCC 0 CONFIG_FM
AT 24-MAR-1991 11:32:52
Test Successful

DECmcc (V1.1)
MCC 0 CONTROL_FM
AT 24-MAR-1991 11:33:13
Test Successful

DECmcc (V1.1)
MCC 0 DNA4_AM
AT 24-MAR-1991 11:33:36
Test Successful

DECmcc (V1.1)
MCC 0 DNA5_AM
AT 24-MAR-1991 11:34:00
Test Successful

DECmcc (V1.1)
MCC 0 ICONICMAP
AT 24-MAR-1991 11:34:13
Test Successful

DECmcc (V1.1)
MCC 0 DOMAIN_FM
AT 24-MAR-1991 11:34:36
Test Successful

DECmcc (V1.1)
MCC 0 SAMPLE_AM
AT 24-MAR-1991 11:34:49
Test Successful

        DECmcc Dictionary Administrator Program Version V1.1

MCC_TBD Version V1.1

    DECmcc DIRECTOR V1.1 Installation Successful

    Completing DECmcc DIRECTOR Installation Verification Procedure ...

           Installation of MCCDIR V1.1 completed at 11:35

           VMSINSTALL procedure done at 11:35
```

Recovering From Errors During Installation

A few errors can occur that cause the system to abort the installation. Recover from these errors by carrying out VMS recovery procedures or ensuring that all prerequisites are met.

Errors that can occur are listed below. Some of these errors occur because you did not obtain all the prerequisites for DECmcc. Refer to “Software and Hardware Requirements” in Chapter 1 for product requirements.

- If you do not meet the following requirements, the installation procedure aborts the installation.
  - All required quotas must be met.
  - Sufficient free global pages must exist.
  - The correct version of VMS software must be installed.
  - Sufficient blocks of disk space must be available.
- If you did not register and load your license for DECmcc, the installation completes successfully. However, DECmcc and the IVP will not run until you register and load your license.

For descriptions of the error messages generated, refer to the VMS documentation on system messages, recovery procedures, and VMS software installation. Take the appropriate action described in the message.

In case of a system failure, follow standard VMS procedure. After restoring the system, begin the installation procedure again.

Exhibit 3–9: Sample Error Messages

1

```
Quota-name quota is: value; must be value or higher to run MCC.
Your account quotas are too low to run the DECmcc DIRECTOR startup
and IVP procedures.
```

2

```
This node has value free global pages/value free, contiguous global
pages. DECmcc requires value free global pages for installing shared
images.

This node requires value additional global pages unless this product is
already installed and currently utilizing the required resources.

Please consult the VMS System Generation Utility Reference Manual for
information regarding the global pages system parameter, as well as for
instructions regarding how to modify the global pages system parameter.

* Do you want to continue [NO]?
```

3

```
This kit requires VAX/VMS V5.3 or later to install.
```

4

```
This kit requires at least value blocks to restore the initial saveset.
This kit requires at least value blocks to install.
This kit requires at least value blocks on the system disk. With
   the AWD option, value blocks are required and value blocks
   are required on the AWD disk.
This kit requires at least value blocks on location to install.
```

5

```
%LICENSE-F-NOLICENSE, no license is active for this software product.

It is recommended that the product startup command procedure be run
after the license has been installed.

NOTE:  The DECdns clerk must be started up before the MCC_STARTUP_DIR
       command procedure is invoked.

It is recommended that the product IVP be run after the license has
been installed.
```

4

Installing and Verifying DECmcc Developer’s Toolkit Software

After installing the DECmcc Director software or the DECmcc Basic Management System software, you are now ready to install your DECmcc Developer’s Toolkit software. This chapter details each step of the installation process, as listed below. If you have not installed the DECmcc Director or the DECmcc Basic Management System, you cannot install the DECmcc Developer’s Toolkit. Refer to the previous chapters for instructions on installing the DECmcc Director or the DECmcc Basic Management System.

Refer to *DECmcc Release Notes* for a sample DECmcc installation and a list of DECmcc Developer’s Toolkit files and logicals.

- Invoking VMSINSTAL
- Selecting a Release Notes Option
- Verifying Registration with the License Management Facility
- Running the Installation Verification Procedure
- Recovering From Errors During Installation

Invoking VMSINSTAL

Invoke VMSINSTAL, and check your system disk backup. Mount your distribution media and the system begins the installation.

1. Log in to the SYSTEM account.
2. Invoke VMSINSTAL by entering the following command.

   ```
   $ @SYS$UPDATE:VMSINSTAL MCCTKvvu ddcn: OPTIONS N,AWD=disk:[directory]
   ```

   Replace *vv* with the major software version number and *u* with the update software version number, such as 011 for Version 1.1.

   Replace *ddcn* with the name of the device on which you plan to mount the media, where *dd* is the device name, *c* is the controller ID, and *n* is the unit number, such as MUA0.

   OPTIONS N,AWD are optional parameters. N indicates you want to be prompted to display or print the release notes, or copy them to SYS$HELP. If you do not include the OPTIONS N parameter, the installation procedure does not prompt you to display, print, or copy the release notes. AWD lets you specify an alternate working device for the temporary working directory, thus enabling you to perform an installation with fewer free blocks on the system disk than is otherwise required.

   The system displays a message stating the software installation procedure version it is using and the date and time.
3. Check for active processes.

   If you have any active processes running, the installation procedure lists the active processes and asks if you want to continue.
4. Check your system disk backup.

   Verify that you are satisfied with the backup copy of your system disk before continuing with the installation.
5. Load the distribution tape into the tape drive. Mount your media.

   When installing from the distribution media (not from copied savesets), the installation procedure checks that the device is mounted. Then the installation procedure prompts you to mount the distribution volume, and asks if you are ready to continue the installation.
6. DECmcc installation begins.

   The installation procedure displays a message that the media containing DECmcc is mounted on the specified device and that the installation is beginning. The installation procedure indicates what version number of DECmcc it is installing.

Exhibit 4–1: Log of Steps 1 Through 6

1

```
Username:  SYSTEM RET
Password:                   RET
```

2

```
$ @SYS$UPDATE:VMSINSTAL MCCTK011 MUA0: OPTIONS N,AWD=DUA2:[INSTALL]

        VAX/VMS Software Product Installation Procedure V5.3

It is 24-MAR-1991 at 10:06
Enter a question mark (?) at any time for help.
```

3

```
%VMSINSTAL-W-ACTIVE, The following processes are still active:
           62893_8236
           PARIS_8241
           SERVER_000C
* Do you want to continue anyway [NO]? YES RET
```

4

```
* Are you satisfied with the backup of your system disk [YES]? RET
```

5

```
Please mount the first volume of the set on MUA0:
* Are you ready? YES RET
%MOUNT-I-MOUNTED, MCC mounted on _MUAO:
```

6

```
The following products will be processed:

  MCCTK V1.1

        Beginning installation of MCCTK V1.1 at 10:06

%VMSINSTAL-I-RESTORE, Restoring product saveset A ...
```

Selecting a Release Notes Option

Select a release notes option and choose whether or not to continue with the installation. Decide if you want DECmcc management specifications copied, and choose to run the Installation Verification Procedure (IVP) automatically.

7. Select a release notes option.

   If you specified OPTION N when you invoked VMSINSTAL, the installation procedure prompts you for a release notes option. These options are described below.

   - If you select option 1 or 3, the installation procedure displays the release notes immediately on your terminal. You can terminate the display at any time by pressing CTRL/C.
   - If you select option 2 or 3, the installation procedure prompts you for a print queue name. Enter a queue name or press RET to send the file to the default output print device, SYS$PRINT.
   - If you select option 4, the installation procedure does not display or print the release notes; however, it does automatically copy them to SYS$HELP.

   No matter which option you select, the installation procedure then asks you if you want to continue the installation. Answer YES to continue or NO to exit the installation procedure.

   The installation procedure copies the release notes to SYS$HELP. Then it verifies that all required quotas are met and the correct version of VMS is installed. Refer to "Recovering From Errors During Installation" later in this chapter for the exact text of messages that display if any of these requirements are deficient.

8. Decide if you want the Module Reference Manuals.

   The DECmcc Developer's Toolkit includes specifications, called *Module Reference Manuals* (MRMs), for the Kernel and several management modules. The MRMs describe the management and service interfaces provided by a module and the services a module requires from other modules, where applicable. The MRMs are supplied in LN03 (.LN3) and PostScript (.PS) formats. If you choose to install them, the procedure places the files in the directory SYSCOMMON:[SYSHELP.EXAMPLES.MCC]. Your disk space must be sufficient.

9. Choose to run the IVP.

   The installation procedure asks if you want to automatically run the IVP at the end of the installation. The IVP for DECmcc ensures that the installation is successful. You should run the IVP immediately after installation.

   The installation procedure verifies that you registered and loaded the PAK for each product you are installing. If you did not register and load the PAK for a DECmcc product, the installation procedure will not run that product's IVP. Refer to "Recovering From Errors During Installation" later in this chapter for the exact text of the message that displays if any of the PAKs are missing.

Exhibit 4–2: Log of Steps 7 through 9

7

```
    Release notes included with this kit are always copied to SYS$HELP.

    Additional Release Notes Options:
        1. Display release notes
        2. Print release notes
        3. Both 1 and 2
        4. None of the above

* Select option [2]: RET
* Queue name [SYS$PRINT]: RET
* Do you want to continue the installation [NO]? YES RET
%VMSINSTAL-I-RELMOVED, The product's release notes have been successfully moved
to SYS$HELP.
***********************************************************************
*                  DECmcc Developer's Toolkit V1.1                    *
*                         Integrated Package                          *
*                                                                     *
*                       Installation Procedure                        *
*                                                                     *
***********************************************************************
```

8

```
    The Module Reference Manuals are the management
    specifications for each module's management and service
    interfaces. The manuals are provided in PostScript form,
    requiring 13000 blocks, and in LN03 form, requiring 10000
    blocks.

* Do you want the Module Reference Manuals [NO]? YES RET
* Do you want the LN03 (.ln3) form of the Module Reference Manuals [No]? RET
* Do you want the PostScript (.ps) form of the Module Reference
  Manuals [No]? YES RET
```

9

```
* Do you want to run the DECmcc DEV-TK IVP after the installation [YES]? RET
```

Verifying Registration with the License Management Facility

Choose to purge files. Verify that you registered DECmcc with the License Management Facility. Remember to add a command invoking DECmcc Developer's Toolkit to your system startup command procedure.

10. Choose to purge files from previous versions of DECmcc.

    You have the option to purge files from previous versions of DECmcc that are superseded by this installation. Purging is recommended because it will save disk space.

11. Verify that you registered and loaded the product licenses with the License Management Facility.

    The installation procedure prints out information about your particular DECmcc license and asks if you have registered and loaded your PAKs. If you registered and loaded your PAKs, answer YES to these question. If you did not register and load your PAKs, answer NO. The installation procedure reminds you to register and load the PAKs before you run the product.

12. Add a command invoking DECmcc Developer's Toolkit to your system startup command procedure.

    The installation procedure notifies you that the DECmcc startup procedure will be invoked after the files are copied. The installation procedure then directs you to modify your local system startup command procedure to automatically set up the DECmcc Developer's Toolkit. After the installation procedure completes, refer to "Modifying Your Local System Startup Procedure" in Chapter 6 for more information on how to modify your system startup command procedure.

Exhibit 4–3: Log of Steps 10 through 12

10

```
* Do you want to purge files replaced by this installation [YES]? RET
```

11

```
        Product:          DECMCC-DEV-TK
        Producer:         DEC
        Version:          1.1
        Release Date:     dd-mm-yyyy

* Does this product have an authorization key registered and loaded? YES RET

VMSINSTAL asks no additional questions.

%VMSINSTAL-I-RESTORE, Restoring product saveset B ...

Following the copying of the files, the DECmcc Developer's
Toolkit startup command procedure(s) will be invoked.
Operational tables will be created by this procedure.
```

12

```
    To automatically set up DECmcc DEVELOPER'S TOOLKIT on your
    system, edit your local system start-up command procedure

           SYS$MANAGER:SYSTARTUP_V5.COM

    so that it invokes the TOOLKIT start-up command procedure.
    Add:

           @SYS$STARTUP:MCC_STARTUP_TK.COM

    Following the TOOLKIT start-up, the TOOLKIT postinstallation
    command procedure will be invoked.

%VMSINSTAL-I-MOVEFILES, Files will now be moved to their target directories ...
```

Running the Installation Verification Procedure

The installation procedure automatically runs the IVP for the DECmcc Developer's Toolkit and completes the installation.

13. The installation procedure runs the DECmcc Developer's Toolkit postinstallation procedure.

    The postinstallation procedure for the DECmcc Developer's Toolkit performs tests on the software.

14. The installation procedure runs the IVP.

    If you answered YES to the IVP question, the installation procedure automatically runs an IVP for the DECmcc Developer's Toolkit if it has a PAK registered and loaded.

    The components of the DECmcc Developer's Toolkit are listed below.

    MSL Translator
    Sample AM Source

Exhibit 4–4: Log of Steps 13 and 14

13

```
Beginning DECmcc DEV-TK Postinstallation Procedure ...

Completing DECmcc DEV-TK Postinstallation Procedure ...
```

14

```
Beginning DEV-TK Installation Verification Procedure ...

Completing DEV-TK Installation Verification Procedure ...
        Installation of MCCTK V1.1 completed at 10:19
        VMSINSTALL procedure done at 10:19
```

Recovering From Errors During Installation

A few errors can occur that cause the system to abort the installation. Recover from these errors by carrying out VMS recovery procedures or ensuring that all prerequisites are met.

Errors that can occur are listed below. Some of these errors occur because you did not obtain all the prerequisites for DECmcc. Refer to “Software and Hardware Requirements” in Chapter 1 for product requirements.

- If you do not meet the following requirements, the installation procedure aborts the installation.
  - All required quotas must be met.
  - The DECmcc Director or DECmcc BMS software must be installed.
  - The correct version of VMS software must be installed.
  - Sufficient blocks of disk space must be available.
- If you did not register and load your license for DECmcc, the installation completes successfully. However, DECmcc and the IVP will not run until you register and load your license.

For descriptions of the error messages generated, refer to the VMS documentation on system messages, recovery procedures, and VMS software installation. Take the appropriate action described in the message.

In case of a system failure, follow standard VMS procedure. After restoring the system, begin the installation procedure again.

Exhibit 4–5: Sample Error Messages

1

```
Quota-name quota is: value; must be value or higher to run MCC.
Your account quotas are too low to run the DECmcc DEV-TK startup and
IVP procedures.
```

2

```
This kit requires that the DECmcc Director or the DECmcc BMS be
installed prior to the installation of the DECmcc Developer's Toolkit.
```

3

```
This kit requires VAX/VMS V5.3 or later to install.
```

4

```
This kit requires at least value blocks to restore the initial saveset.
This kit requires at least value blocks to install.
```

5

```
%LICENSE-F-NOLICENSE, no license is active for this software product.

It is recommended that the product startup command procedure be run
after the license has been installed.

NOTE:  The DECdns clerk must be started up before the MCC_STARTUP_TK
       command procedure is invoked.

It is recommended that the product IVP be run after the license has
been installed.
```

5

Installing and Verifying Independent DECmcc Management Module Software

After installing the DECmcc Director software or the DECmcc Basic Management System software, you are now ready to install any optional DECmcc independent management modules. This chapter presents the general steps of the installation process. If you need to install the DECmcc Director software or the DECmcc Basic Management System software, refer to the previous chapters. The installation process consists of the following steps:

- Ensuring a Smooth Installation
- Invoking VMSINSTAL
- Selecting a Release Notes Option
- Choosing to Run the Installation Verification Procedure and Purging Files
- Updating the DECmcc Dictionary, Parse Tables, and Help File
- Verifying Registration with the License Management Facility
- Running the Installation Verification Procedure
- Recovering From Errors During Installation

This installation procedure installs the DECmcc management module software on the disk defined by the MCC_SYSTEM logical. Refer to the specific management module *Release Notes* for all product-specific installation requirements, a sample installation, and a list of files and logicals.

If you upgrade either the DECmcc Director or the DECmcc Basic Management System, you should reinstall all independent management modules to update the DECmcc dictionary again and to rebuild the parse tables and help file.

Ensuring a Smooth Installation

This section lists several steps that, if done ahead of time, can save you time and ensure a smooth installation.

Exhibit 5–1 provides a preinstallation checklist and a list of associated documents. The following tasks must be completed before you begin software installation:

1. Check the distribution kit. Ensure that you have a complete distribution kit by comparing the kit against the bill of materials (BOM). If any part of the kit is missing, contact your Digital representative.

2. Back up the system disk. This installation involves writing to your system disk. You should make a backup copy of your system disk before installing DECmcc.

3. Meet all requirements. Ensure that you obtain all prerequisite software, system privileges, quotas, and disk space before you begin the installation. Refer to the specific management module release notes for a complete list of requirements for specific DECmcc management modules. The specific management module Software Product Description (SPD) and System Support Addendum (SSA) list hardware and software requirements.

4. Register and load the licenses for the DECmcc management modules you wish to install. If you do not register and load the licenses, you can complete the installation procedure; however, the Installation Verification Procedure (IVP) will not run. Refer to “Registering the Licenses for DECmcc” in Chapter 1 to register and load the license for DECmcc.

5. Load the distribution tape into the tape drive; then, mount the distribution tape.

6. Access and read the on-line release notes. They contain the latest information about DECmcc. To access on-line release notes, enter the following command:

   ```
   $ @SYS$UPDATE:VMSINSTAL productvvu ddcn: OPTIONS N
   ```

   Replace *product* with the name of the product, such as MCCFDA or MCCTCPIP. Replace *vv* with the major software version number and *u* with the update software version number, such as 010 for Version 1.0.

   Replace *ddcn* with the name of the device on which you plan to mount the media, where *dd* is the device name, *c* is the controller ID, and *n* is the unit number, such as MUA0.

   OPTIONS N is an optional parameter that indicates you want to be prompted to display or print the release notes, or copy them to SYS$HELP. If you do not include the OPTIONS N parameter, the installation procedure does not prompt you to display, print, or copy the release notes.

Exhibit 5–1: Preinstallation Checklist

Things To Do Before Installation	Where To Find Information	Done?
Check distribution kit	n/a	☐
Back up system disk	n/a	☐
Obtain Saveset Name	Cover letter, release notes	☐
Meet all requirements	Refer to list below	☐
System manager level privileges	n/a	☐
Software	Release notes, SSA	☐
Distribution media	Release notes	☐
Process quotas	Release notes	☐
System parameters	Release notes	☐
Disk space	Release notes	☐
Estimated time to install	Release notes	☐
Register the licenses for the product	Release notes, product authorization key (PAK)	☐
Load and mount the distribution tape	n/a	☐
Read on-line release notes	n/a	☐

Associated Documents

Document Title	Description of Contents
Bill of Materials (BOM)	Lists all items in the distribution kit
Management Module Cover Letter	Introduces the product
Management Module Release Notes	Contains the latest information about the DECmcc management module, such as changes to the installation procedure
Software Product Description (SPD)	Describes the product generally
System Support Addendum (SSA)	Lists software and hardware requirements and processors supported
Guide to VMS Software Installation	Provides general installation information
VMS System Manager's Manual	Contains information on setting recommended user account quotas, privileges and system parameters

Invoking VMSINSTAL

Invoke VMSINSTAL, and check your system disk backup. After you mount your distribution media, the system begins the installation.

1. Log in to the SYSTEM account.

2. Invoke VMSINSTAL by entering the following command:

   ```
   $ @SYS$UPDATE:VMSINSTAL productvvu ddcn: OPTIONS N
   ```

   Replace *product* with the name of the product, such as MCCFDA or MCCTCPIP. Replace *vv* with the major software version number and *u* with the update software version number, such as 010 for Version 1.0.

   Replace *ddcn* with the name of the device on which you plan to mount the media, where *dd* is the device name, *c* is the controller ID, and *n* is the unit number, such as MUA0.

   OPTIONS N is an optional parameter that indicates you want to be prompted to display or print the release notes, or copy them to SYS$HELP. If you do not include the OPTIONS N parameter, the installation procedure does not prompt you to display, print, or copy the release notes.

   The system displays a message stating the software installation procedure version it is using and the current date and time.

3. Check for active processes.

   If you have any active processes running, the installation procedure lists the active processes and asks if you want to continue.

4. Check your system disk backup.

   Verify that you are satisfied with the backup copy of your system disk before continuing with the installation.

5. Load the distribution tape into the tape drive. Mount your media.

   When installing from the distribution media (not from copied savesets), the installation procedure checks that the device is mounted. Then the installation procedure prompts you to mount the distribution volume, and asks if you are ready to continue the installation.

6. DECmcc installation begins.

   The installation procedure displays a message that the media containing the DECmcc management module is mounted on the specified device and that the installation is beginning. The installation procedure indicates what version number of the DECmcc management module it is installing.

Exhibit 5–2: Log of Steps 1 Through 6

1

```
Username:  SYSTEM RET
Password:                 RET
```

2

```
$ @SYS$UPDATE:VMSINSTAL product010 MUA0: OPTIONS N

        VAX/VMS Software Product Installation Procedure V5.3

It is 24-MAR-1991 at 10:06
Enter a question mark (?) at any time for help.
```

3

```
%VMSINSTAL-W-ACTIVE, The following processes are still active:
           62893_8236
           PARIS_8241
           SERVER_000C
* Do you want to continue anyway [NO]? YES RET
```

4

```
* Are you satisfied with the backup of your system disk [YES]? RET
```

5

```
Please mount the first volume of the set on MUA0:
* Are you ready? YES RET
%MOUNT-I-MOUNTED, MCC mounted on _MUAO:
```

6

```
The following products will be processed:

  product Vn.n

        Beginning installation of product Vn.n at 10:06

%VMSINSTAL-I-RESTORE, Restoring product saveset A ...
```

Selecting a Release Notes Option

Select a release notes option and choose whether or not to continue with the installation.

7. Select a release notes option.

   If you specified OPTION N when you invoked VMSINSTAL, the installation procedure prompts you for a release notes option. These options are as follows:

   - If you select option 1 or 3, the installation procedure displays the release notes immediately on your terminal. You can terminate the display at any time by pressing CTRL/C.
   - If you select option 2 or 3, the installation procedure prompts you for a print queue name. Enter a queue name or press RET to send the file to the default output print device, SYS$PRINT.
   - If you select option 4, the installation procedure does not display or print the release notes; however, it does automatically copy them to SYS$HELP.

   No matter which option you select, the installation procedure then asks you if you want to continue the installation. Answer YES to continue or NO to exit the installation procedure.

   The installation procedure copies the release notes to SYS$HELP. Then it verifies that all required quotas are met, the DECdns nameserver is accessible, and the correct version of VMS is installed. Refer to "Recovering From Errors During Installation" later in this chapter for the exact text of messages that display if any of these requirements are deficient.

Exhibit 5–3: Log of Step 7

7

```
        Release notes included with this kit are always copied to SYS$HELP.

        Additional Release Notes Options:
            1. Display release notes
            2. Print release notes
            3. Both 1 and 2
            4. None of the above

    * Select option [2]: RET
    * Queue name [SYS$PRINT]: RET
    * Do you want to continue the installation [NO]? YES RET
    %VMSINSTAL-I-RELMOVED, The product's release notes have been successfully moved
    to SYS$HELP.
    ***********************************************************************
    *                      DECmcc product Vn.n                            *
    *                       Management Module                             *
    *                                                                     *
    *                     Installation Procedure                          *
    *                                                                     *
    ***********************************************************************
```

Choosing to Run the IVP and Purging Files

Choose to run the Installation Verification Procedure (IVP) automatically. Choose to purge files.

8. Choose to run the IVP.

   The installation procedure asks if you want to automatically run the IVP at the end of the installation. The IVP for DECmcc ensures that the installation is successful. You should run the IVP immediately after installation.

   The installation procedure verifies that you registered and loaded the PAK for each product you are installing. If you do not register and load the PAK for a DECmcc product, the installation procedure will not run that product's IVP. Refer to "Recovering From Errors During Installation" later in this chapter for the exact text of the message that displays if any of the PAKs are missing.

   If you do not update the DECmcc dictionary and parse tables, the installation procedure will not run that product's IVP. Refer to "Recovering From Errors During Installation" later in this chapter for the exact text of the message that displays if the DECmcc dictionary and parse tables are not updated.

9. Choose to purge files from previous versions of DECmcc.

   You have the option to purge files from previous versions of the DECmcc management module that are superseded by this installation. Purging is recommended because it will save disk space.

Exhibit 5–4: Log of Steps 8 and 9

8
```
* Do you want to run the DECmcc product IVP after the installation [YES]? RET
```

9
```
* Do you want to purge files replaced by this installation [YES]? RET
```

Updating the DECmcc Dictionary, Parse Tables, and Help File

Choose to update the DECmcc dictionary. If you are installing more than one independent management module, delay rebuilding the DECmcc parse tables and help file until you install the last management module.

10. Choose to update the DECmcc dictionary.

    The installation procedure adds new management specification information to the DECmcc dictionary. If you do not update the dictionary, you cannot use the management module.

    This process takes a minimum of 15 minutes. You should update the dictionary. If you do not update the dictionary, the installation procedure will not run the IVP.

    If you update either the DECmcc Director or the DECmcc Basic Management System, you should reinstall all independent management modules to update the dictionary again.

11. Choose to rebuild the DECmcc parse tables.

    The installation procedure incorporates new DECmcc directives into the parse tables using the specification information in the dictionary. If you do not rebuild the parse tables, you cannot use the management module.

    This process takes a minimum of one hour. You should rebuild the parse tables. If you do not rebuild the parse tables, the installation procedure will not run the IVP. If you are installing more than one independent management module, delay rebuilding the parse tables until you install the last management module.

    If you update either the DECmcc Director or the DECmcc Basic Management System, you should reinstall all independent management modules. If you are reinstalling more than one independent management module, delay rebuilding the DECmcc parse tables until you install the last management module.

12. Choose to rebuild the DECmcc help file.

    The installation procedure adds new help file information to the DECmcc help file. If you do not rebuild the help file, help text information for that management module will not be available.

    This process takes a minimum of one hour. You should rebuild the help file. If you are installing more than one independent management module, delay rebuilding the help file until you install the last management module.

    If you upgrade either the DECmcc Director or the DECmcc Basic Management System, you should reinstall all independent management modules. If you are reinstalling more than one independent management module, delay rebuilding the help file until you install the last management module.

Exhibit 5–5: Log of Steps 10 through 12

⑩
```
* Do you want to update the DECmcc dictionary [YES]? RET
```

⑪
```
* Do you want to rebuild the DECmcc parse tables [YES]? RET
```

⑫
```
* Do you want to rebuild the DECmcc help file [YES]? RET
%VMSINSTAL-I-RESTORE, Restoring product saveset B ...
```

Verifying Registration with the License Management Facility

Verify that you registered the DECmcc management module with the License Management Facility. Remember to add a command invoking the DECmcc Management Module to your system startup command procedure.

13. Verify that you registered and loaded the product licenses with the License Management Facility.

    The installation procedure prints out information about your particular DECmcc management module license and asks if you have registered and loaded your PAKs. If you registered and loaded your PAKs, answer YES to these question. If you did not register and load your PAKs, answer NO. The installation procedure reminds you to register and load the PAKs before you run the product.

14. Add a command invoking the DECmcc management module to your system startup command procedure.

    The installation procedure notifies you that the DECmcc management module startup procedure will be invoked after the files are copied. The installation procedure then directs you to modify your local system startup command procedure to automatically set up the DECmcc management module. After the installation procedure completes, refer to “Modifying Your Local System Startup Procedure” in Chapter 6 for more information on how to modify your system startup command procedure.

Exhibit 5–6: Log of Steps13 and 14

13

```
        Product:            DECMCC-product
        Producer:           DEC
        Version:            n.n
        Release Date:       dd-mm-yyyy

* Does this product have an authorization key registered and loaded? YES RET

Following the copying of the files, this procedure will
invoke the DECmcc product startup command procedure(s).
Operational tables will be updated.
```

14

```
    To automatically set up DECmcc product on your system,
    edit your local system start-up command procedure

           SYS$MANAGER:SYSTARTUP_V5.COM

    so that it invokes the product start-up command procedure.
    Add:

           @SYS$STARTUP:product_STARTUP.COM

    after the statement that invokes the DECmcc DIRECTOR or
    DECmcc BMS startup command file (MCC_STARTUP_DIR.COM or
    MCC_STARTUP_BMS.COM)

    Following the product start-up, this procedure will
    invoke the product postinstallation command procedure.

    VMSINSTAL asks no additional questions.

%VMSINSTAL-I-MOVEFILES, Files will now be moved to their target directories ...
```

Running the Installation Verification Procedure

The installation procedure automatically runs the IVP for the DECmcc management module and completes the installation.

15. The installation procedure runs the DECmcc management module postinstallation procedure.

    If you answered YES to the questions about the DECmcc dictionary, parse tables, and help file, the postinstallation procedure for the DECmcc management module automatically updates the dictionary, rebuilds the parse tables, updates the help file, and runs the management module startup procedure. This process takes a minimum of two hours.

16. The installation procedure runs the IVP.

    If you answered YES to the IVP question, the installation procedure automatically runs an IVP for the DECmcc management module if a PAK is registered and loaded and the DECmcc dictionary and parse tables are updated.

    The IVP performs a test on the management module software to verify proper installation.

Exhibit 5–7: Log of Step 12

15

```
Beginning DECmcc product Postinstallation Procedure ...

                                   .
                                   .
                                   .

Completing DECmcc product Postinstallation Procedure ...
```

16

```
Beginning product Installation Verification Procedure ...

                                   .
                                   .
                                   .

Completing product Installation Verification Procedure ...
        Installation of product Vn.n completed at 10:19
        VMSINSTALL procedure done at 10:19
```

Recovering From Errors During Installation

A few errors can occur that cause the system to abort the installation. Recover from these errors by carrying out VMS recovery procedures or ensuring that all prerequisites are met.

Errors can occur that can cause the system to abort during installation. Some of these errors occur because you did not obtain all the prerequisites for DECmcc. Refer to the specific management module *Release Notes* for all product-specific installation requirements. Installation errors can include the following:

- If you do not meet the following requirements, the installation procedure aborts the installation. Refer to Exhibit 5–8 for the text of the messages.
  - All required quotas must be met. Refer to example 1.
  - The DECmcc Director or DECmcc BMS software must be installed. Refer to example 2.
  - DECdns must be installed and operational. Refer to example 3.
  - The correct version of VMS software must be installed. Refer to example 4.
  - Sufficient blocks of disk space must be available. Refer to example 5.
- If you did not register and load your license for DECmcc, the installation completes successfully. However, DECmcc and the IVP will not run until you register and load your license. Refer to example 6.

For descriptions of the error messages generated, refer to the VMS documentation on system messages, recovery procedures, and VMS software installation. Take the appropriate action described in the message.

In case of a system failure, follow standard VMS procedure. After restoring the system, begin the installation procedure again.

Exhibit 5–8: Sample Error Messages

1

```
Quota-name quota is: value; must be value or higher to run product.
Your account quotas are too low to run the product startup and IVP
procedures.
```

2

```
This kit requires that the DECmcc Director or the DECmcc BMS be
installed prior to the installation of the product.
```

3

```
This kit requires DECdns to install.
```

4

```
This kit requires VAX/VMS V5.3 or later to install.
```

5

```
This kit requires at least value blocks to restore the initial saveset.
This kit requires at least value blocks to install.
```

6

```
%LICENSE-F-NOLICENSE, no license is active for this software product.

It is recommended that the product startup command procedure be run
after the license has been installed.

NOTE:  The DECdns clerk must be started up before the MCC_STARTUP_TK
       command procedure is invoked.

It is recommended that the product IVP be run after the license has
been installed.
```

6

Preparing to Use DECmcc

After installing DECmcc, you can read the release notes in the following files, where *vv* represents the major software version number and *u* represents the update software version number.

- SYS$HELP:MCCBMS*vvu*.RELEASE_NOTES
- SYS$HELP:MCCDIR*vvu*.RELEASE_NOTES
- SYS$HELP:MCCTK*vvu*.RELEASE_NOTES
- SYS$HELP:*productvvu*.RELEASE_NOTES

Once you install DECmcc, there are a few things you must do before you can manage your network. The following topics describe these preparatory tasks:

- Verifying the Installation
- Setting Up the VAX DNS Namespace
- Creating the DNS Directories Required for DECmcc
- Creating the .DNA_Registrar Access Control Group
- Creating a Procedure to Register DECnet Phase IV Nodes
- Creating Additional DNS Directories
- Managing the .DNA_Registrar Access Control Group
- Modifying Your Local System Startup Procedure
- Running DECmcc in a Cluster Environment
- Setting Protection on DECmcc Files
- Troubleshooting
- Troubleshooting the DNS Namespace

Verifying the Installation

You can run the IVP separately from the installation procedure.

If you installed your software before registering and loading the license, you should run the IVP immediately after loading the license. To run the IVP:

1. Log in to the SYSTEM account.
2. Enter this command to run the IVP for DECmcc Director.

   ```
   $ @SYS$SYSROOT:[SYSTEST]MCC_DIR_IVP.COM
   ```

3. Enter this command to run the IVP for DECmcc Basic Management System.

   ```
   $ @SYS$SYSROOT:[SYSTEST]MCC_BMS_IVP.COM
   ```

4. Enter this command to run the IVP for DECmcc Developer's Toolkit.

   ```
   $ @SYS$SYSROOT:[SYSTEST]MCC_TK_IVP.COM
   ```

5. Enter this command to run the IVP for a DECmcc independent management module.

   ```
   $ @SYS$SYSROOT:[SYSTEST]product_IVP.COM
   ```

Exhibit 6–1: Running the IVP

```
$ @SYS$SYSROOT:[SYSTEST]MCC_DIR_IVP.COM
.
.
.
DECmcc DIRECTOR V1.1 Installation Successful
$

$ @SYS$SYSROOT:[SYSTEST]MCC_BMS_IVP.COM
.
.
.
DECmcc BMS V1.1 Installation Successful
$

$ @SYS$SYSROOT:[SYSTEST]MCC_TK_IVP.COM
$

$ @SYS$SYSROOT:[SYSTEST]product_IVP.COM
.
.
.
$
```

Setting Up the VAX DNS Namespace

DECmcc uses the VAX Distributed Name Service (DNS) namespace as a repository for all entity names in your network. Digital assists you in setting up your namespace by providing a command procedure to partially automate this process.

For DECmcc to run, the DNS clerk and server must be running. The server, containing the appropriate clearinghouse, must be accessible. In the DNS namespace, entity names are stored in directories that are hierarchically structured, much like VMS directories and subdirectories. (This hierarchical structure of DNS directories is separate from the entity class hierarchy.) You only need to create these directories once per namespace.

The main directory in the namespace is called the root directory. An entity's name reflects the complete path through your namespace from the root directory to the entity entry in a particular directory. Therefore, all DNS names begin with a dot character (.), which denotes the root directory. Refer to the *VMS Version 5.3 New Features Manual* and the *VAX Distributed Name Service Management Guide* for more information about DNS and namespace management.

A DNS namespace containing the root directory was created when the DNS software was installed on a server node. The following steps describe how to modify the namespace using the DNS Setup command procedure:

1. Enter the following command on the DNS server node:

   ```
   $ @MCC_SYSTEM:MCC_DNS_SETUP.COM
   ```

   This command procedure sets up default directories for the DECmcc Director, creates a directory for each global entity class for which Digital provides an AM, and sets up .DNA_BackTranslation child directories for all the possible areas in a DECnet Phase IV network.

   The procedure also creates the .DNA_Registrar DNS group, which you can use to list those who have READ, WRITE, DELETE, TEST, and CONTROL access to the directories and objects registered in the DNS namespace. The procedure sets WORLD READ or WORLD READ,WRITE access privileges to the directories it creates, as appropriate.

   You can also use this procedure to set up additional DNA_BackTranslation child directories for DECnet/OSI extended areas.

2. The procedure prompts you for the name of the namespace to use. If you do not supply a name, the procedure uses the default established when the DNS software was installed.

Exhibit 6–2: Running the DNS Setup Procedure

1

```
$ @MCC_SYSTEM:MCC_DNS_SETUP

DECmcc namespace setup procedure

Type a question mark (?) at any prompt to obtain help
Press "CTRL/Z" at any prompt to exit from a function
```

2

```
* Namespace to use (DEF=<DECdns_default>): jc_ns RET

The "jc_ns:" namespace will be used
```

Creating the DNS Directories Required for DECmcc

DECmcc requires a number of directories in the DNS root directory. The DNS Setup procedure will create the required directories for you.

3. If this is the first time you have run DNS Setup, you must create a number of directories required by DECmcc in the DNS root directory. The DECmcc Director requires the following directories:

   - .DNA_BackTranslation
   - .DNA_Node
   - .DNA_NodeSynonym
   - .DTSS_GlobalTimeServers
   - .MCC

   The DECmcc Basic Management System (BMS) requires the following additional directories in the DNS root:

   - .MCC_Bridge_BackTranslation
   - .MCC_Station_BackTranslation

   After creating the .DNA_BackTranslation directory, the procedure creates the following child directories in it:

   - .DNA_BackTranslation.*IDP* (where *IDP* is a string representing each Initial Domain Part as a hex number, for example, %X49; refer to "You Must Obtain Your Network Address Initial Domain Part" in Chapter 1.)
   - .DNA_BackTranslation.*IDP*.*area* (where *area* is a string representing each area in your DECnet network as a four-digit hex number with leading zeros, for example, area 15 is .%X000F).

   See Appendix B for a description of the required directories.

Exhibit 6–3: Creating the Required DNS Directories

3

```
Warning - the jc_ns: namespace has not yet been properly set up

The following directories do not exist:

 jc_NS:.DNA_BackTranslation
 jc_NS:.DNA_NodeSynonym
 jc_NS:.DNA_Node
 jc_NS:.DTSS_GlobalTimeServers
 jc_NS:.MCC
 jc_NS:.MCC_Bridge_BackTranslation
 jc_NS:.MCC_Station_BackTranslation

* Initialize the namespace directories now (Y/N, DEF=Yes): RET

Create the initial namespace directories
Press Control-Z at any question to cancel the initialization
```

Creating the .DNA_Registrar Access Control Group

The DNS Setup procedure sets the proper access control for the created directories. It also creates the .DNA_Registrar access control group.

4. The procedure prompts you to supply the names of the clearinghouses for the master and read–only replicas. For the master replica, the procedure uses the default established when the DNS software was installed. The clearinghouse for the read–only replica is optional.

   The procedure first creates the .DNA_Registrar control group, which you can use to list those users who have read, write, delete, test, and control access to the directories and objects registered in the DNS namespace.

Exhibit 6–4: Creating and Setting Access Control for Directories

4

```
* Clearinghouse for master replica (DEF=<DECdns_default>): jc_ch RET
* Clearinghouse for read-only replica (DEF=<none>): RET

The DECdns directories and group will now be created.  This may take up
to 33 minutes or more, depending on the speed of the DECdns server
system, and the amount of traffic on the network.

Creating the .“DNA_Registrar” group
Setting READ,WRITE,DELETE,TEST,CONTROL access for jc_ns:.DNA_Registrar
Setting READ,TEST access for WORLD (jc_ns:.*...)

Creating the jc_ns:.“DNA_BackTranslation” directory (in clearinghouse jc_ns:jc_ch)
Setting READ,WRITE,DELETE,TEST,CONTROL access for jc_ns:.DNA_Registrar
Setting READ,WRITE,DELETE,TEST,CONTROL default access for jc_ns:.DNA_Registrar
Setting READ,TEST access for WORLD (jc_ns:.*...)
Setting READ,TEST default access for WORLD (jc_ns:.*...)

Creating the jc_ns:.“DNA_BackTranslation”.%X49 directory (in clearinghouse jc_ns:jc_ch)
Setting READ,WRITE,DELETE,TEST,CONTROL access for jc_ns:.DNA_Registrar
Setting READ,WRITE,DELETE,TEST,CONTROL default access for jc_ns:.DNA_Registrar
Setting READ,TEST access for WORLD (jc_ns:.*...)
Setting READ,TEST default access for WORLD (jc_ns:.*...)

Creating the .“DNA_BackTranslation”.%X49.%X0001 directory (in clearinghouse jc_ch)
.
.
.
Creating the jc_ns:.“MCC_Station_BackTranslation” directory (in clearinghouse
jc_ns:jc_ch)
Setting READ,WRITE,DELETE,TEST,CONTROL access for jc_ns:.DNA_Registrar
Setting READ,WRITE,DELETE,TEST,CONTROL default access for jc_ns:.DNA_Registrar
Setting READ,WRITE,TEST access for WORLD (jc_ns:.*...)
Setting READ,TEST default access for WORLD (jc_ns:.*...)

DECdns namespace setup is complete

* Press RETURN to continue RET

The following were created:

     Group:       jc_ns:.DNA_Registrar
     Directory:   jc_ns:.DNA_BackTranslation
    .
    .
    .
* Press RETURN to continue RET
```

Creating a Procedure to Register DECnet Phase IV Nodes

The DNS setup procedure can automatically create a command procedure for registering all your DECnet Phase IV nodes. Digital strongly recommends that you use this method to register DECnet Phase IV nodes.

5. To create the registration procedure, select Function 2 from the menu. The DNS setup procedure prompts you to supply a name for the file.

   The DNS setup procedure creates the file you named and one secondary command procedure for each area in the network. The secondary procedures have the same name as the main registration procedure with "_*nn*" appended. "*nn*" is the number of the area. For example:

   ```
   PHASE4_REGISTRATION.COM_09
   ```

   Each file created is placed in the SYS$COMMON:[MCC] directory by default.

   The primary and secondary registration procedures place the nodes they register in the .DNA_Node directory. If you want to use different directories, you can edit the procedures.

Exhibit 6–5: Creating the Phase IV Node Registration Procedure

5

```
If this is the first time you have set up the namespace directories, you
should use MCC_DNS_SETUP to:

  - Create a command file to automatically register previously defined
    Phase IV nodes, and then execute that command file.
  .
  .
  .
* Press RETURN to continue RET

Choose one of the following functions by specifying its function number,
or request help by typing HELP or a question mark (?)

  0. Exit

  1. Create the initial namespace directories
  2. Create a command file to help register existing Phase IV nodes
  3. Create additional directories in the name space
  4. Create back translation directories for new network IDPs and areas

  5. Add members to the access control group
  6. Remove members from the access control group
  7. Show members of the access control group

* Function to execute: 2 RET

Create a command file to help register existing Phase IV nodes
Press Control-Z at any question to cancel the function

* Name of file to create: mcc_dns_node_registration.com RET

Creating the Phase IV node registration command file.  The ".DNA_Node"
directory will be used for all node registrations.

The information used to create this command file will be read from the
Phase IV permanent data file:

  SYS$SYSTEM:NETNODE_REMOTE.DAT

This data file contains definitions for all Phase IV nodes that were
entered using the "NCP DEFINE NODE" command.

Working ...

The resulting files have been named:

 Primary command file to execute:
    SYS$COMMON:[MCC]MCC_DNS_NODE_REGISTRATION.COM

 Secondary command files, one for each network area "nn"
    SYS$COMMON:[MCC]MCC_DNS_NODE_REGISTRATION.COM_nn

* Press RETURN to continue RET
```

Creating Additional DNS Directories

Use the DNS setup procedure to create additional directories, if you need them. In particular, AMs you purchase in addition to those supplied with DECmcc may require special directories.

6. Function 3 on the DNS Setup procedure menu allows you to create additional directories in the DNS root directory.

   Some independent AMs require that you create a class–specific back translation directory in the root. The directory name should have the form:

   .MCC_*global–entity–class–name*_BackTranslation

   The variable *global–entity–class–name* is the ASCII string for the registered name of the global entity class. See each independent AM's *Use* manual or Release Notes for its DNS requirements and for the name of its global entity class.

   If you have Digital's TCP/IP AM, you need to create the directory .MCC_IP.

   The DNS Setup procedure prompts you to supply names of the clearinghouses for the master and read–only replicas. For the master replica, the procedure uses the default you specified earlier. The clearinghouse for the read–only replica is optional.

   Digital recommends that you use the DNS startup procedure to create all your DNS directories. The procedure automatically sets the proper access control for the directories it creates.

   Function 4 on the DNS Setup procedure menu allows you to create additional back translation directories for new areas you add to your network.

Exhibit 6–6: Adding New Directories

6

```
Choose one of the following functions by specifying its function number,
or request help by typing HELP or a question mark (?)

  0. Exit  1. Create the initial namespace directories
  2. Create a Phase IV node registration command file
  3. Create additional directories for node name objects
  4. Create additional directories for new network areas

  5. Add members to the access control group
  6. Remove members from the access control group
  7. Show members of the access control group

  * Function to execute: 3 RET

Create additional directories for node names
Press Control-Z when done

* Directory name: .mcc_ip RET
* Clearinghouse for master replica (Def=jc_ch): RET
* Clearinghouse for read-only replica (Def=<none>): RET

Creating the jc_ns:."mcc_ip" directory (in clearinghouse jc_ns:jc_ch)
Setting READ,WRITE,DELETE,TEST,CONTROL access for jc_ns:.DNA_Registrar
Setting READ,WRITE,DELETE,TEST,CONTROL default access for jc_ns:.DNA_Registrar
Setting READ,TEST access for WORLD (jc_ns:.*...)
Setting READ,TEST default access for WORLD (jc_ns:.*...)

* Directory name:  CTRL/Z
```

Managing the .DNA_Registrar Access Control Group

If you wish, you can use the DNS Setup procedure you to add, delete, and display members of the .DNA_Registrar access control group.

Functions 5, 6, and 7 on the DNS Setup procedure menu allow you to manage the DNA_Registrar control group, which you can use to list those who have READ, WRITE, DELETE, TEST, and CONTROL access to the directories and objects registered in the DNS namespace.

7. Use Function 7 to show those users who may already be in the .DNA_Registrar group.

8. Use Function 5 if you want to add members to the group. The setup procedure prompts you to specify the member to be added. Supply a user name in the form *node*::*user*, where *node* is a DECnet Phase IV node name.

   Function 6 deletes members from the group.

Exhibit 6–7: Managing the DNA_Registrar Access Control Group

7

```
Choose one of the following functions by specifying its function number,
or request help by typing HELP or a question mark (?)
.
.
.
  5. Add members to the access control group
  6. Remove members from the access control group
  7. Show members of the access control group

 * Function to execute: 7 RET

Show members of the access control group
Group name ."DNA_Registrar"

 No information

* Press RETURN to continue RET
```

8

```
Choose one of the following functions by specifying its function number,
or request help by typing HELP or a question mark (?)
.
.
.
  5. Add members to the access control group
  6. Remove members from the access control group
  7. Show members of the access control group

* Function to execute: 5 RET

Add members to the access control group

Specify the members to be added, one at a time
Press Control-Z when finished

* Member: lyon::system RET

Adding member jc_ns:.DNS$IV.lyon.system to ."DNA_Registrar"

* Member: CTRL/Z
.
.
.
* Function to execute: 7 RET

Show members of the access control group
Group name ."DNA_Registrar"

Member ____ jc_NS:.dns$iv.lyon.system

* Press RETURN to continue RET
```

Modifying Your Local System Startup Procedure

Add a command to your local system startup procedure to automatically set up DECmcc every time you reboot.

By adding a command in your local system startup command procedure, you can automatically set up DECmcc on your system every time you reboot. The command you add runs the MCC startup command procedure.

You must position this command carefully in the system startup file, because both the VAX DNS clerk and DECnet must be started up before DECmcc is started. Follow these steps using your favorite editor to modify your system startup procedure.

1. Search for the place in your startup procedure where you start up the VAX DNS clerk. Make a note of the line number. The command to start the DNS clerk is

   ```
   $ @SYS$COMMON:[SYSMGR]DNS$CLIENT_STARTUP.COM
   ```

2. Search for the place in your startup procedure where you start up the DECnet software (search for STARTNET.COM). Make a note of the line number.

3. If you installed the DECmcc Director, insert the following command on a line that is greater than both of the line numbers you found in the previous steps.

   ```
   $ @SYS$STARTUP:MCC_STARTUP_DIR.COM
   ```

4. If you installed the DECmcc Basic Management System, insert the following command on a line that is greater than the line number you found in the previous steps.

   ```
   $ @SYS$STARTUP:MCC_STARTUP_BMS.COM
   ```

5. If you installed the DECmcc Developer's Toolkit, insert the following command on a line that is greater than the line number in the previous step.

   ```
   $ @SYS$STARTUP:MCC_STARTUP_TK.COM
   ```

6. If you installed an independent management module, insert the following command on a line that is greater than the line number where you start the DECmcc Director or DECmcc BMS software.

   ```
   $ @SYS$STARTUP:product_STARTUP.COM
   ```

If you do not add the above command(s) to your local system startup procedure, you will receive the following error when trying to invoke DECmcc after a system reboot.

```
%DCL-W-ACTIMAGE, error activating image MCC_MTS_PRIV_SHR
-CLI-E-IMGNAME, image file <disk>:[SYS0.SYSCOMMON.][SYSLIB]
MCC_MTS_PRIV_SHR.EXE;1
-SYSTEM-F-PROTINSTALL, protected image must be installed
```

Exhibit 6–8: Example System Startup Procedure

```
$ IF F$SEARCH("SYS$SYSTEM:NETACP.EXE") .NES. "" THEN @SYS$MANAGER:STARTNET
$ IF F$SEARCH("SYS$MANAGER:CMSSTARTUP.COM") .NES. "" -
  THEN $ @SYS$MANAGER:CMSSTARTUP.COM
$ IF F$SEARCH("SYS$MANAGER:DTMSTARTUP.COM") .NES. "" -
  THEN $ @SYS$MANAGER:DTMSTARTUP.COM
$! @SYS$STARTUP:MCC_STARTUP_DIR.COM              !For DIRECTOR
$ @SYS$STARTUP:MCC_STARTUP_BMS.COM               !For BMS
$ @SYS$STARTUP:MCC_STARTUP_TK.COM                !For DEV-TK
$ @SYS$STARTUP:product_STARTUP.COM               !Once for each management module
```

Running DECmcc in a Cluster Environment

If you execute DECmcc on other nodes in your VAXcluster, you must prepare the system-specific root directories on each of the other nodes.

Log in to the SYSTEM account and create root directories on each node in a cluster.

1. Enter the following command:

```
$ CREATE/DIRECTORY SYS$SPECIFIC:[MCC]/OWNER_UIC=PAR/PROT=(G:RE,W:RWE)
```

Now you must rebuild the DCL tables on each node by performing the following tasks.

2. Use the Install utility to replace the DCLTABLES file.

```
$ INSTAL
INSTALL> REPLACE SYS$COMMON:[SYSLIB]DCLTABLES.EXE/HEADER/OPEN/SHARE
INSTALL> EXIT
```

3. Add the MANAGE/ENTERPRISE command to the process DCL tables.

```
$ SET COMMAND SYS$COMMON:[MCC]MCC_COMMANDS.CLD
```

4. Ensure that the VAX DNS clerk is started up. Run the MCC startup command file.

```
$ @SYS$STARTUP:MCC_STARTUP_DIR.COM          !For DIRECTOR and BMS
$ @SYS$STARTUP:MCC_STARTUP_BMS.COM          !For BMS
$ @SYS$STARTUP:MCC_STARTUP_TK.COM           !For DEV-TK
$ @SYS$STARTUP:product_STARTUP.COM          !Once for each management module
```

Exhibit 6–9: Preparing Individual Nodes in a Cluster

9

```
$ CREATE /DIRECTORY SYS$SPECIFIC:[MCC]/OWNER_UIC=PAR/PROT=(G:RE,W:R)
```

10

```
$ INSTAL
INSTALL> REPLACE SYS$COMMON:[SYSLIB]DCLTABLES.EXE/HEADER/OPEN/SHARE
INSTALL> EXIT
```

11

```
$ SET COMMAND SYS$COMMON:[MCC]MCC_COMMANDS.CLD
```

12

```
$ @SYS$STARTUP:MCC_STARTUP_DIR.COM          !For DIRECTOR and BMS
$ @SYS$STARTUP:MCC_STARTUP_BMS.COM          !For BMS
$ @SYS$STARTUP:MCC_STARTUP_TK.COM           !For DEV-TK
$ @SYS$STARTUP:product_STARTUP.COM          !Once for each management module
```

Setting Protection on DECmcc Files

If nonprivileged people need to use DECmcc, you must change protection to allow them to access several files.

When DECmcc software is first installed, file protections are set for system, owner, and group to have full access and world to have read-only access. If a nonprivileged user attempts to execute a directive that requires privileges, error messages display indicating that a file protection violation exists. Follow your company security policy to change the protection in order to allow nonprivileged users access to DECmcc.

These are examples of how you might open a DECmcc common file for access by the nonprivileged user Wanda James. Refer to the specific access or function module manual for examples of how to open specific files for access by nonprivileged users.

1. This example illustrates how to change access control for only one user:

   ```
   $ SET FILE MCC_COMMON:MCC_DISPATCH_TABLE.DAT -
     /ACL=(IDENTIFIER=[NETMAN,W_JAMES],ACCESS=READ+WRITE)
   ```

2. This example illustrates how to change the file protection:

   ```
   $ SET PROTECTION=(W:RW) MCC_COMMON:MCC_DISPATCH_TABLE.DAT
   ```

Exhibit 6–10: DECmcc File Protections

File Name	Contents	Default Protections	Access Required
MCC_SPECIFIC:	This is a directory that contains the DECmcc system specific files.	S:RWE O:RWE G:RE W:R	Change to match access of files within this directory.
MCC_COMMON:	This is a directory that contains the files below.	S:RWE O:RWE G:RE W:R	Change to match access of files within this directory.
MCC_DISPATCH_TABLE.DAT	Dispatch tables for DECmcc Management Modules	S:RWED O:RWED G:RE W:R	To enroll new Management Modules, you need to have RW access.
MCC_META_DICTIONARY.DAT	Dictionary hierarchy for MCC_DICTIONARY.DAT	S:RWED O:RWED G:RWED W:R	To use DECmcc Developer's Toolkit, you must have R access.
MCC_META_DEFINITION.DAT	Data that describe all known definitions for MCC_DEFINITION.DAT	S:RWED O:RWED G:RWED W:R	To use DECmcc Developer's Toolkit, you must have R access.
MCC_MIR_DIRECTORY.DAT	List of all known repositories for DECmcc	S:RWED O:RWED G:RWED W:R	To use DECmcc Director or DECmcc BMS, you must have R access. To use DECmcc Developer's Toolkit, Historian, Exporter, and Alarms FMs, you must have RW access.
MCC_MIR_ATTRIBUTE.DAT	Locations and RMS file attributes for all known repositories for DECmcc	S:RWED O:RWED G:RWED W:R	To use DECmcc Director or DECmcc BMS, you must have R access. To use DECmcc Developer's Toolkit, Historian, Exporter, and Alarms FMs, you must have RW access.
MCC_DICTIONARY.DAT	Entity class hierarchies	S:RWED O:RWED G:RWED W:R	To use DECmcc Director or DECmcc BMS, you must have R access. To use DECmcc Developer's Toolkit, you must have RW access.
MCC_DEFINITION.DAT	Entity meta-data	S:RWED O:RWED G:RWED W:R	To use DECmcc Director or DECmcc BMS, you must have R access. To use DECmcc Developer's Toolkit, you must have RW access.
MCC_PTB_PARSER.BPT	Command parser information	S:RWED O:RWED G:RWED W:R	To use DECmcc Director or DECmcc BMS, you must have R access.

Troubleshooting

If you encounter a problem with the DECmcc software or documentation, please document the problem thoroughly and submit a report on that problem to Digital.

If an error occurs and you believe that the error is due to a problem in DECmcc, document that error using the following suggestions:

- Describe the state of the system and the circumstances when the problem occurred as accurately as possible. Ensure that you specify the version number of DECmcc that you are running (use SHOW MCC 0 ALL CHARACTERISTICS to get the version number). Illustrate the problem with specific examples.

  If you report a documentation error, specify the title of the document as well as the section and page number where the error was found.

- Isolate the error as much as possible.
- Submit sources on machine-readable media (magnetic tape), if possible. All media will be returned to you when the problem report is answered.
- Report only one problem at a time. This will facilitate a faster response.

Experience shows that many problem reports do not contain sufficient information to duplicate or identify the problem. Complete and concise information will help Digital give accurate and timely service to software problems.

Exhibit 6–11: Information To Supply in Your Problem Report

- Your network configuration
- Any enrollment data
- Problem occurred in foreground or background mode
- Entity that was being managed
- Problem in access, function, or presentation management module
- Who supplied the software (for example, Digital, third party name, or your company)
- Problem occurred in management or user interface
- Other network management products installed

Troubleshooting the DNS Namespace

Problems running DECmcc can occur if the DNS namespace is not properly set up . You can take a variety of steps to troubleshoot your namespace.

1. You can use the following DNS$CONTROL command to determine that the required DNS directories exist:

   ```
   $ MCR DNS$CONTROL SHOW DIR . KNOWN CHILD
   ```

   The DECmcc Director requires the following child directories in the DNS root:

   - .DNA_BackTranslation
   - .DNA_Node
   - .DNA_NodeSynonym
   - .DTSS_GlobalTimeServers
   - .MCC

   DECmcc BMS requires the following additional directories in the root:

   - .MCC_Bridge_BackTranslation
   - .MCC_Station_BackTranslation

   An AM you add may require a directory of the following form in the root:

   .MCC_<*global_entity_class_name*>_BackTranslation

2. The MCC_SYSTEM:MCC_DNS_SETUP.COM procedure creates child directories for the .DNA_BackTranslation directory. Use the following DNS$CONTROL command to ensure that child directories exist for the IDP that you are using:

   ```
   $ MCR DNS$CONTROL SHOW DIR .DNA_BACKTRANSLATION KNOWN CHILD
   ```

3. DECmcc must be able to communicate with the DNS server. If not, you receive an error message. Failure to communicate with the DNS server can occur for a variety of reasons. Exhibit 6–12 lists some of the more common reasons. Since the problem may be temporary, you should retry the directive that failed before looking for the reason.

Exhibit 6–12: Some Reasons for Failure to Communicate with the DNS Server

- The DNS server has not been started.
- The link to the DNS server went down.
- No more links are available to the DNS server.
- No more processes are available on the DNS server.
- The requestor does not have the correct DNS access privileges.
- The DNS process on the server had a low priority causing a timeout of the link.
- The DNS image on the client or the server is corrupt.

A

Installation Checklist

This appendix contains a preinstallation and a postinstallation checklist for quick reference.

Table A–1: Preinstallation Checklist

Tasks	Requirements	Where Discussed	Completed
Check distribution kit	Compare against Build of Materials	Page 1–2	☐
Obtain your network address IDP	Contact allocation authority	Page 1–4	☐
Back up system disk		Page 1–2	☐
Obtain prerequisite software and hardware	VAX/VMS V5.3 software or later VAX DNS V1.1 software or later DECnet software up and running (Refer to SPD and SSA for the correct software versions) VAX supported processors (refer to the SPD and SSA)	Page 1–6	☐
Check privileges	System manager level	Page 1–6	☐
Set process quotas	ASTLM = 48 BIOLM = 36 DIOLM = 18 ENQLM = 512 FILLM = 40 PGFLQUO = 30000 PRCLM = 2 TQELM = 128 WSQUO = 2048	Page 1–6	☐
Plan for required disk space	DECmcc–BMS 70,000 blocks or 20,000 blocks on the system disk and 50,000 blocks on the DECmcc common files disk. DECmcc–DIRECTOR 60,000 blocks or 13,000 blocks on the system disk and 47,000 blocks on the DECmcc common files disk. DECmcc–DEV–TK 7,000 blocks plus 13,000 blocks for PostScript MRM files or 10,000 blocks for LN03 MRM files.	Page 1–6	☐
Schedule time for installation (approximate time on a TK50 on a MicroVAX II with 14 MBytes of memory)	90 minutes for DECmcc BMS 60 minutes for DECmcc Director 30 minutes for DECmcc Developer's Toolkit	Page 1–6	☐
Load and mount distribution tape	TK50 tape distribution kit	Page 1–2	☐
Register and load the PAKS	DECmcc–BMS DECmcc–DIRECTOR DECmcc–DEV–TK	Page 1–10	☐
Access on-line release notes		Page 1–12	☐

Decide on location for DECmcc common files	Disk and directory name	Page 1–2	☐
Calculate your TDF	Offset from UTC (was GMT)	Page 1–14	☐
Decide whether to install Reports	Other products must be installed	Page 1–16	☐
Log in to the SYSTEM account		Page 2–2	☐
Invoke VMSINSTAL		Page 2–2	☐

Table A–2: Postinstallation Checklist

Tasks	Requirements	Where Discussed	Completed
Set up your VAX DNS namespace	Run the DNS Setup procedure	Pages 6–4 to 6–12	☐
Modify your local system startup procedure	Add command to automatically set up DECmcc on reboot	Page 6–16	☐
For cluster environments, create a new directory on each node.	Prepare system-specific roots	Page 6–18	☐
Set protection on DECmcc files	Opening files for nonprivileged users	Page 6–20	☐

B

DNS Directories Required by DECmcc

This appendix describes the required directories created in the DNS root directory by the DNS Setup command procedure.

Required DNS Directories

The DNS Setup Procedure creates several required directories in the DNS root.

.DNA_BackTranslation

This directory is used to translate an address to a name. This directory contains one child directory for each IDP in the network. Each IDP child directory contains one child directory for each local area defined within that IDP. Each local area child directory contains one soft link for each node defined in that local area. The soft link for each node is created by DECmcc when you register the node.

.DNA_NodeSynonym

This directory holds soft links used to translate a Phase IV node synonym to a registered fullname. This directory contains a soft link for each node that has a Phase IV node synonym. Synonym soft links for nodes are created by DECmcc when you register the nodes.

.DTSS_GlobalTimeServers

This is used by DECdts to hold the names and network locations of global time servers. DECmcc does not use this directory, but it is needed for compatibility with other software.

.DNA_Node

The command procedure created by Function 2 on the DNS Setup menu registers Phase IV nodes in this directory.

.MCC

This directory holds objects containing information about the various installed DECmcc directors known to this namespace.

.MCC_*global–entity–class–name*_BackTranslation

These directories contain soft links for every instance of the specified global entity registered by DECmcc.