LAN Traffic Monitor Installation

Order No. AA-JP15C-TE

January 1990

This manual explains how to install the LAN Traffic Monitor software on a VAX system running VMS, and how to down-line load the LTM Listener software to a LAN Bridge 100 or a LAN Bridge 150.

Revision/Update Information:	This is a revised manual.
Operating System and Version:	VAX/VMS Version 5.2-1 and later
Software Version:	LAN Traffic Monitor, Version 1.2

digital™

AA-JP15C-TE
First Edition, June 1987
Second Edition, January 1989
Third Edition, January 1990

The information in this document is subject to change without notice and should not be construed as a commitment by Digital Equipment Corporation. Digital Equipment Corporation assumes no responsibility for any errors that may appear in this document.

The software described in this document is furnished under a license and may be used or copied only in accordance with the terms of such license.

No responsibility is assumed for the use or reliability of software on equipment that is not supplied by Digital Equipment Corporation or its affiliated companies.

Copyright ©1987, 1989, 1990 by Digital Equipment Corporation
All Rights Reserved
Printed in U.S.A.

The postpaid READER'S COMMENTS form on the last page of this document requests the user's critical evaluation to assist in preparing future documentation.

The following are trademarks of Digital Equipment Corporation:

DEC	DIBOL	UNIBUS
DEC/CMS	EduSystem	VAX
DEC/MMS	IAS	VAXcluster
DECnet	MASSBUS	VMS
DECsystem–10	PDP	VT
DECSYSTEM–20	PDT	
DECUS	RSTS	
DECwriter	RSX	

digital™

This manual was produced by Networks and Communications Publications.

Contents

Preface

1 Before Installing the LAN Traffic Monitor Software

1.1 Before You Begin the Software Installation 1–2
1.2 Checking the Contents of the Kit 1–2
1.3 LAN Traffic Monitor Software and Load Hosts 1–2
1.4 Registering the LAN Traffic Monitor Software License 1–3
1.5 Installing the LAN Traffic Monitor Distribution Software . 1–4
1.6 Configuring the Load Host's Node Database 1–4
1.7 Verifying the Installation 1–5

2 Installing the LAN Traffic Monitor Software

2.1 Overview of VMSINSTAL 2–1
2.2 Release Notes 2–1
2.3 Preparing to Run the Installation Procedure 2–2
2.4 Aborting the Installation 2–2
2.5 Running VMSINSTAL 2–3

3 After Installing LAN Traffic Monitor Software

3.1 Running the Installation Verification Procedure 3–1
3.2 Installing onto Alternate Load Hosts 3–2
3.3 Installing onto VAXclusters 3–2
3.4 Editing the System Startup File 3–3

4 Configuring the Load Host's Node Database

4.1 Overview of LTM$LOAD_CONFIG 4–1
4.1.1 Databases Affected by LTM$LOAD_CONFIG 4–2
4.1.2 Other LTM$LOAD_CONFIG Functions Needed for Down-Line Loading 4–3
4.2 Specifying DECnet Characteristics 4–3
4.2.1 DECnet Node Name 4–4
4.2.2 DECnet Node Address 4–4
4.2.3 Ethernet Hardware Address 4–4
4.2.4 Service Circuit 4–5
4.3 Preparing to Run the Configuration Procedure 4–6
4.4 LTM$LOAD_CONFIG Conventions and Requirements 4–7
4.5 Running LTM$LOAD_CONFIG 4–8
4.5.1 List Known LTM Listeners (Option 1) 4–9
4.5.2 Add an LTM Listener (Option 2) 4–10
4.5.3 Swap an Existing LTM Listener (Option 3) 4–11
4.5.4 Delete an Existing LTM Listener (Option 4) 4–13
4.5.5 Restore Existing LTM Listeners (Option 5) 4–14
4.6 Restoring from Your Start-Up Procedure 4–14
4.7 Monitoring Down-Line Loading 4–15

A Sample LAN Traffic Monitor Installation

B LAN Traffic Monitor Distribution Files

Preface

This installation guide explains how to:

- Install the LAN Traffic Monitor software onto a VMS system running DECnet Phase IV, enabling the system to perform as a load host
- Verify the installation
- Configure the load host's node database

Intended Audience

This guide is for the system manager or network manager responsible for installing the LAN Traffic Monitor software on a VMS system on the Ethernet. A *system manager* is responsible for the VMS system that is about to be established as a load host. A *network manager* is responsible for the local area network (LAN).

To use this guide effectively, you should be familiar with both DECnet Phase IV network management concepts and the VMS operating systems.

Associated Documents

The following is a list and description of other manuals related to the LAN Traffic Monitor:

- *LAN Traffic Monitor Release Notes* (on-line)

  This collection of notes contains information and updates not included in the LAN Traffic Monitor manuals. The release notes are delivered on-line as part of the software distribution kit.

- *LAN Traffic Monitor User's Guide*

  Describes how to use the menus and informational displays of the LAN Traffic Monitor.

- *LAN Bridge 100 Hardware Installation/Owner's Guide*

  Describes how to install the LAN Bridge 100 on the Ethernet.

- *LAN Bridge 150 Hardware Installation/Owner's Guide*

  Describes how to install the LAN Bridge 150 on the Ethernet.

Conventions

Familiarize yourself with the conventions discussed in this section to help you use this manual effectively. The following conventions apply to numbers:

- All numbers are decimal unless otherwise noted.
- All Ethernet addresses are given in hexadecimal.

Graphic Conventions Used in This Manual

Conventions	Meanings
Special type	Indicates an example of system output or user input. System output is in black type; user input is in red type.

UPPERCASE	In command lines, indicates keywords to be entered. Note that you can type the characters in either uppercase or lowercase. Command keywords can be abbreviated to the smallest number of characters that your system accepts. For example, the following two commands are the same:
	`NCP> SHOW NODE node-name`
	or
	`NCP> SH N node-name`

italics	Indicates a variable.
bold	Indicates an important term that is defined in the text.
[ ]	In installation dialogues, indicate that the enclosed value is the default. To specify the default, press Return. To specify another value, type it after the brackets and press Return. In command lines, indicate that you can enter one, and only one, of the enclosed options, but that none is required. Do not type the brackets.
Key	Indicates that you should press the specified key.
Ctrl/*x*	Indicates that you should hold down the Ctrl key, then press the key specified by *x*.

NOTE

Throughout the manual it is assumed that user input will only be entered by pressing Return at the end of a command line.

1

Before Installing the LAN Traffic Monitor Software

The LAN Traffic Monitor software is an Ethernet monitor that uses a LAN Bridge 100 or LAN Bridge 150 as a base from which to gather traffic statistics and periodically forward them to a VMS system for compilation and analysis. The LAN Traffic Monitor contains two subsystems: the LTM Listener, which is special monitoring software that is down-line loaded to a LAN Bridge 100 or LAN Bridge 150, and the LTM User Interface, which is installed on a VMS system with an Ethernet controller and associated driver.

The User Interface software can be installed on the VMS systems listed in the System Software Addendum (SSA). The SSA also specifies the required classes of VMS that support the LAN Traffic Monitor. DECnet Phase IV software is required for the load host. The *load host* is the DECnet-VAX system that can respond to a load request from a LAN Bridge 100 or LAN Bridge 150, because the Ethernet address for that bridge has been entered in the host's node database.

Remote Bridge Management Software (RBMS) can also be used to control the down-line loading of the LAN Bridge 100 or LAN Bridge 150. See the *LAN Traffic Monitor Release Notes* for more information.

The software you are about to install consists of the files in the LAN Traffic Monitor distribution kit. After you install the LAN Traffic Monitor distribution software, configure the VMS system's node database for all new LTM Listeners, thus establishing the system as a load host for those units.

1.1 Before You Begin the Software Installation

Before you start the software installation, ensure that the LAN Bridge 100 or LAN Bridge 150 to be used as a Listener is properly installed. If you have not already obtained the *LAN Traffic Monitor Identification Card* from the system/network manager, do so at this time. This card should list the following:

- Serial number of LAN Bridge 100 or LAN Bridge 150 unit
- Ethernet address of LAN Bridge 100 or LAN Bridge 150 unit
- Location of LAN Bridge 100 or LAN Bridge 150 unit
- Name of person who installed LAN Bridge 100 or LAN Bridge 150 unit

In addition, the system/network manager should have added the following information:

- DECnet node name of the load host
- DECnet node address of the load host

You will need this information to install the LAN Traffic Monitor software and to configure the load host's node database.

1.2 Checking the Contents of the Kit

The LAN Traffic Monitor software is available on a variety of distribution media. Your Bill of Materials (BOM) specifies the quantity and contents of your media. Contact your Digital Equipment Corporation representative if any components of the kit are missing.

1.3 LAN Traffic Monitor Software and Load Hosts

The LAN Bridge 100 or LAN Bridge 150 unit is delivered without LAN Traffic Monitor software. The LTM Listener software image must be down-line loaded by a DECnet-VAX load host in response to a load request from the bridge. The LAN Traffic Monitor software distribution kit consists of this image file as well as several other distribution files.

As the software installer, your first task is copying the distribution files from the distribution medium to a system designated as a load host by the network manager. A *load host* is a system that has the LAN Traffic Monitor software installed and both a node database and DECnet database with

entries for specific LAN Bridge 100 or LAN Bridge 150 units to be used as Listeners. As a result, a load host system can down-line load the LTM Listener software image to LAN Bridge 100 or LAN Bridge 150 units on the local Ethernet network.

Load hosts must be VMS systems running DECnet Phase IV on the same Ethernet network as the LAN Bridge 100 or LAN Bridge 150 unit. Digital advises that a minimum of two load hosts be assigned for each LAN Bridge 100 or LAN Bridge 150 unit used by the LAN Traffic Monitor.

1.4 Registering the LAN Traffic Monitor Software License

You must register your LAN Traffic Monitor software license with the VMS License Management Facility (LMF) before you can verify the installation or run LTM.

The license registration information you need is contained in the Product Authorization Key (PAK) that is shipped with LAN Traffic Monitor. The PAK is a paper certificate that contains information about the license you have to operate LAN Traffic Monitor.

It is best to register your LAN Traffic Monitor license before you perform the installation. During the installation, you are asked if you have registered the LAN Traffic Monitor license and loaded the appropriate authorization key. You can complete the installation without registering the license, but you will not be able to run the Installation Verification Procedure (IVP) or use LAN Traffic Monitor.

To register a license, first log in to the system manager's account, SYSTEM. There are two ways to perform the registration:

- Invoke the SYS$UPDATE:VMSLICENSE.COM procedure. When it prompts you for information, respond with data from your PAK.

  or

- Issue the LICENSE REGISTER DCL command with the appropriate qualifiers that correspond to information on the PAK.

For complete information on using LMF, see the *VMS License Management Utility Manual*.

1.5 Installing the LAN Traffic Monitor Distribution Software

Install the LAN Traffic Monitor distribution software onto a VMS system using an automated procedure called VMSINSTAL.COM. VMSINSTAL does the following:

- Copies the files from the distribution media to the load host
- Creates the appropriate directory for these files
- Moves the *LAN Traffic Monitor Release Notes* to the SYS$HELP directory
- Initializes the LTM logical names

See Chapter 2 for complete instructions on installing the distribution software. See Appendix B for a list of the LAN Traffic Monitor distribution files.

1.6 Configuring the Load Host's Node Database

After you copy the distribution software to your VMS system, configure its node database to support new LTM Listeners, thus establishing it as a load host for those units.

Configure the DECnet database with an automated procedure called LTM$LOAD_CONFIG.COM. The LTM$LOAD_CONFIG.COM file is part of the LAN Traffic Monitor software distribution kit. Note that you must have DECnet running, with the Network Control Program (NCP) installed.

Configuration of the load host's node database means defining an entry for each LAN Bridge 100 or LAN Bridge 150 unit to be used as a Listener in a data file called LTM$LOAD_DB.DAT. This data file is automatically created by LTM$LOAD_CONFIG and is part of the load host's node database.

Configuration of a new LTM Listener unit involves adding an entry to this database. The entry identifies the following characteristics of LTM Listeners:

- DECnet node name
- DECnet node address
- Service circuit
- Ethernet address

Configuration can also involve changing and deleting entries for existing units. With LTM$LOAD_CONFIG, you can look at and modify the load host's node database in these ways:

- List known LTM Listeners
- Add a new LTM Listener unit
- Swap an old unit for a new one, or swap DECnet characteristics, such as the DECnet node name, for the same unit
- Delete a unit
- Restore the LTM Listeners to the host DECnet database

To configure LAN Traffic Monitor on a VAXcluster, install the distribution software onto one member node, and then configure the node databases of the members that you want to establish as load hosts. See Chapter 4 for details on configuring the load host's node database to support LTM Listener units.

1.7 Verifying the Installation

You need to perform two verifications:

1. Verify the installation of each load host. This requires checking that each load host can successfully down-line load LTM Listener software to LAN Bridge 100 or LAN Bridge 150 units.
2. Verify the total LAN Traffic Monitor installation. This includes checking that:
   - The bridge hardware operates with the new software
   - The new software is running successfully

See Chapter 2 for a discussion of the Installation Verification Procedure (IVP).

2

Installing the LAN Traffic Monitor Software

This chapter describes how to install and verify the installation of the LAN Traffic Monitor software on your VMS load host.

To install the software, use VMSINSTAL.COM, an automated procedure that is part of the VMS operating system. For more information about VMSINSTAL, refer to the VMS system management documentation.

2.1 Overview of VMSINSTAL

VMSINSTAL is the standard automated procedure used to install VMS layered products. During the installation of the LAN Traffic Monitor, VMSINSTAL:

- Creates a directory called SYS$SYSROOT:[DECSERVER] on the load host, if necessary.
- Copies the files from the distribution media into this directory.
- Copies the release notes to the SYS$HELP directory and also prints or displays them if you have instructed VMSINSTAL to do so.

2.2 Release Notes

The distribution kit includes release notes, which contain information not in this documentation that Digital Equipment Corporation strongly recommends that you read before proceeding with the installation.

You can obtain the release notes during product installation. If you include OPTIONS N in the command that invokes VMSINSTAL, the installation procedure asks if you want to display or print the release notes. It is important to review the release notes in case they contain information that might affect the product installation.

After the installation, VMSINSTAL copies the release notes to the following text file: SYS$HELP:LTM012.RELEASE_NOTES.

You can also access the release notes file through the on-line Help facility by entering the following command:

```
$ HELP LTM012 RELEASE_NOTES
```

2.3 Preparing to Run the Installation Procedure

Before you run VMSINSTAL, follow these steps:

1. Register and load your license for LAN Traffic Monitor before you start the installation in order to run the Installation Verification Procedure (IVP).
2. Determine which systems are designated as load hosts for the LTM Listener. You must install the distribution software onto all load hosts. In a VAXcluster environment, you need to install the distribution software on only one node of the cluster. Ask your network manager or the person responsible for assigning load hosts.
3. Make sure that there are 1100 blocks of free disk space on each load host for copying the distribution files. To determine the number of free disk blocks on the current system disk, enter the following command at the DCL prompt:

   ```
   $  SHOW DEVICE SYS$SYSDEVICE
   ```

2.4 Aborting the Installation

To abort the installation procedure at any time, press Ctrl/Y. The installation procedure deletes all the files it has created up to that point and exits. You can then start the installation again.

2.5 Running VMSINSTAL

Run VMSINSTAL.COM from the privileged system manager's account or from an account with the appropriate privileges. For more information about the privileges required, refer to the VMSINSTAL documentation. Note that VMSINSTAL turns off the BYPASS privilege at the start of the installation.

The installation procedure takes approximately ten minutes. If you choose to configure the load host's node database at this time, additional time will be required.

1. Place the LAN Traffic Monitor distribution medium on the appropriate device drive.
2. Log into the system account, SYSTEM.
3. Start VMSINSTAL by entering these commands:

   ```
   $ @SYS$UPDATE:VMSINSTAL LTM012 device-identifier OPTIONS N
   ```

   device-identifier is the device on which the distribution medium is mounted. If you do not supply the device name, VMSINSTAL prompts you for this information later in the installation procedure.

   OPTIONS N instructs VMSINSTAL to prompt you to display or print the release notes. Digital Equipment Corporation strongly recommends that you read the release notes before proceeding with the installation. VMSINSTAL has several other options; for information, see the *VMS System Manager's Manual*.

   VMSINSTAL displays the procedure title, the date and time, and continues with the following (the warning message appears only if DECnet is running):

   ```
   %VMSINSTAL-W-DECNET, Your DECnet network is up and running.

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

4. Type YES and press Return to proceed with the installation. VMSINSTAL asks:

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

   Press Return to answer YES, or take appropriate action.

   If you are installing from the distribution media, VMSINSTAL prompts you to mount the first volume:

   ```
   Please mount the first volume of the set on device-identifier.

   * Are you ready?
   ```

5. Type YES and press Return. A confirmation message says that the medium is mounted. The procedure continues:

```
The following products will be processed:

  LTM V1.2

  Beginning installation of LTM V1.2 at time

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

6. If you specified OPTIONS N when you invoked VMSINSTAL, you are now given five options for reviewing the release notes.

```
Release Notes Options:

    1. Display release notes
    2. Print release notes
    3. Both 1 and 2
    4. Copy release notes to SYS$HELP
    5. Do not display, print, or copy release notes

* Select option [2]:
```

   If you select option 1, VMSINSTAL displays the release notes immediately on the console terminal. You can terminate the display at any time and continue the installation procedure by pressing Ctrl/C.

   If you select option 2, VMSINSTAL prompts you for the name of the print queue that you want to use:

```
* Queue name [SYS$PRINT]:
```

   You can enter a queue name or press Return to send the file to the default output print device.

   If you select option 3, VMSINSTAL displays the release notes immediately on the terminal and prompts you for a queue name for the printed notes.

   If you select option 4, VMSINSTAL copies the release notes to the SYS$HELP directory, where they can be accessed through the VMS Help Facility.

   If you select option 5, VMSINSTAL continues with the installation without taking any of the actions described by the other options.

7. The procedure now asks if you want to continue the installation. To continue, enter YES. Otherwise, press Return.

```
* Do you want to continue the installation ?: YES
%VMSINSTAL-I-RELMOVED, The product's release notes have been successfully
moved to SYS$HELP.
```

The release notes are located in the following file: SYS$HELP:LTM012.RELEASE_NOTES.

NOTE

The name of the release notes file installed by VMSINSTAL consists of the current product name and version number. To maintain a history of product changes, do not delete release notes for previous versions of LAN Traffic Monitor.

8. Next, VMSINSTAL displays this prompt:

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

   You have the option to purge files from previous versions of LAN Traffic Monitor that are superseded by this installation. Purging is recommended; however, if you need to keep files from the previous version, enter NO in response to the question.

   If the installation procedure finds the LTM$SETUP.COM file in the SYS$COMMON:[DECSERVER] directory, it renames the file LTM$SETUP.OLD_COM rather than purging it. This saves any edits that you may have made to the file.

9. VMSINSTAL now asks if you want to run the Installation Verification Procedure (IVP). The IVP for LAN Traffic Monitor checks to ensure that the installation was successful. Digital Equipment Corporation recommends that you run the IVP.

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

10. The procedure now checks the VMS operating system to make sure the version is 5.2-1 or later. If it is not at least at that level, VMSINSTAL displays an informational warning and asks whether you want to continue with the installation:

```
%LTM-W-BADVMS1, This kit requires VMS V5.2-1 or later to run LTM V1.2
%LTM-W-BADVMS2, Please install VMS V5.2-1 or later before installing
   LTM V1.2

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

    If you respond YES, an informational warning is displayed:

```
%LTM-W-LTMPATCH, Installation will continue.
   Must include appropriate VMS patch to run LTM V1.2.

%LTM-I-RELNOTES, Please refer to the LTM V1.2 Release Notes
   for more information.
```

11. VMSINSTAL then displays information specific to the software license and asks if you have registered and loaded your authorization key for LAN Traffic Monitor:

```
        Product:        LTM
        Producer:       DEC
        Version:        1.2
        Release Date:   05-JAN-1990

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

    If you have not registered and loaded your authorization key, you should answer NO to this question. You will not be able to run the IVP or use LAN Traffic Monitor until an authorization key is registered and loaded. Be certain that this has been completed before proceeding with the installation. For instructions on registering and loading a key, see the *VMS License Management Utility Manual*.

12. VMSINSTAL now displays a number of informational messages that report on the progress of the installation.

```
************************************************************
The interactive part of the installation is over. There are no
more operator questions.
************************************************************

%VMSINSTAL-I-SYSDIR, This product creates the system disk
directory VMI$ROOT:[DECSERVER].

****************************************************************

The files in the distribution kit will be copied to the
appropriate system directories.

File                          System directory
----------------------        ----------------
LTM$SETUP.COM                 SYS$COMMON:[DECSERVER]
LTM$LOAD_CONFIG.COM           SYS$COMMON:[DECSERVER]
LTM$TYPE_NAME.DAT             SYS$COMMON:[DECSERVER]
LTM$MC_NAME.DAT               SYS$COMMON:[DECSERVER]
LTM$ADDR_NAME.DAT             SYS$COMMON:[DECSERVER]
LTMLIS0200.SYS                SYS$COMMON:[DECSERVER]
LTM$REGRESSION.COM            SYS$COMMON:[SYSTEST.LTM]
LTM$REGRESSION.BMK            SYS$COMMON:[SYSTEST.LTM]
LTM$IVP.COM                   SYS$COMMON:[SYSTEST]
LTM$UI.EXE                    SYS$SYSTEM:
LTM012.RELEASE_NOTES          SYS$HELP:
----------------------        ----------------

                              NOTE

  PLEASE place the command "$ @SYS$SYSROOT:[DECSERVER]LTM$SETUP"
  in SYS$MANAGER:SYSTARTUP_V5.COM to initialize LTM logical names
  at system boot time. Place it after the DECnet startup command.
```

Depending on whether this is a new installation or an upgrade, you may see the following messages:

```
By default, LTM files will be placed in the SYS$COMMON:[DECSERVER]
directory.  If the following LTM user updateable files are found in the
SYS$COMMON:[DECSERVER] directory, no new installation files will be copied
over them:

    File Name
    ---------
    LTM$ADDR_NAME.DAT
    LTM$TYPE_NAME.DAT
    LTM$MC_NAME.DAT

If the following file is found in the SYS$COMMON:[DECSERVER] directory, it
will be copied by this installation:

     Old File Name                          New File Name
     -------------                          -------------
     LTM$SETUP.COM;                        LTM$SETUP.OLD_COM;

NOTE: If you run in a cluster common environment and change or copy newly
      tailored files in the LTM directory, you may wish to check whether any
      files exist in the system specific directory.  These system specific
      files will overide files created during the installation of LTM V1.2.
      Also, these files will not be accessible from all nodes in the cluster.
      You may wish to move these files to the common directory once the
      installation completes.

      This installation will warn you if it finds any LTM files in the
      SYS$SPECIFIC:[DECSERVER] directory.
*******************************************************************************
```

The following messages are displayed for all installations:

```
%VMSINSTAL-I-SYSDIR, This product creates system disk directory
   VMI$ROOT:[SYSTEST.LTM].
%CREATE-I-EXISTS, VMI$ROOT:[SYSTEST.LTM] already exists
```

VMSINSTAL continues as follows for both single nodes and VAXcluster members:

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

See Appendix B for descriptions of the LAN Traffic Monitor VMS distribution files.

13. The Installation Verification Procedure (IVP) for LAN Traffic Monitor V1.2 is now run.

The IVP runs the LTM User Interface just enough to verify that all logical names and symbols were defined correctly. In order to do this, the IVP specifies a nonexistent Listener address. The LTM User Interface then attempts to communicate with the nonexistent Listener using the Ethernet device driver, and then exits. The system displays the following messages while the IVP is running:

```
The LAN Traffic Monitor V1.2 Installation Verification Procedure
is now beginning. The LTM IVP takes at most 1 minute to complete.

LAN Traffic Monitor V1.2 initialization procedure
%DCL-S-SPAWNED, process ONUS_1 spawned
%DCL-S-ATTACHED, terminal now attached to process ONUS_1
%DCL-S-RETURNED, control returned to process _RTA1:

The LAN Traffic Monitor V1.2 Installation Verification Procedure
has completed successfully.
```

If you receive a failure message instead of the message shown above, the installation procedure did not install all the required files. Ensure that you have all the prerequisite hardware and software products specified in the System Software Addendum (SSA). Repeat the installation procedure, following the instructions carefully. If the problem persists, contact your Digital Equipment Corporation representative.

14. The procedure continues by indicating that the distribution files were copied to their appropriate directories and instructing you on how to continue. Then it displays:

```
Installation of LTM V1.2 completed at time

    VMSINSTAL procedure done at hh:mm
```

3
After Installing LAN Traffic Monitor Software

This chapter discusses tasks you perform after you complete the LAN Traffic Monitor installation. See Chapter 4 for information about configuring the load host's node database to support LTM Listener units.

3.1 Running the Installation Verification Procedure

You can run the IVP independent of the installation procedure by typing:

```
$ @SYS$TEST:LTM$IVP.COM
```

The IVP runs the LTM User Interface just enough to verify that all logical names and symbols were defined correctly. In order to do this, the IVP specifies a nonexistent Listener address. The LTM User Interface then attempts to communicate with the nonexistent Listener using the Ethernet device driver, then exits. The system displays the following messages while the IVP is running:

```
The LAN Traffic Monitor V1.2 Installation Verification Procedure
is now beginning. The LTM IVP takes at most 1 minute to complete.

LAN Traffic Monitor V1.2 initialization procedure
%DCL-S-SPAWNED, process ONUS_1 spawned
%DCL-S-ATTACHED, terminal now attached to process ONUS_1
%DCL-S-RETURNED, control returned to process _RTA1:

The LAN Traffic Monitor V1.2 Installation Verification Procedure
has completed successfully.
```

If you receive a failure message instead of the message shown above, the installation procedure did not install all the required files. Ensure that you have all the prerequisite hardware and software products specified in the System Software Addendum (SSA). Repeat the installation procedure,

following the instructions carefully. If the problem persists, contact your Digital Equipment Corporation representative.

3.2 Installing onto Alternate Load Hosts

Alternate load hosts for each LAN Listener free the LAN Traffic Monitor from dependence on one particular load host. Any alternate load host can perform a down-line load if the original load host is unavailable.

Digital Equipment Corporation suggests that you assign a minimum of two load hosts for each LTM Listener unit. As with the original load host, an alternate VMS load host must:

- Be running DECnet Phase IV
- Have an Ethernet controller on the same Ethernet as the LTM Listener unit
- Have the distribution software installed
- Have LTM Listener entries in its node database

3.3 Installing onto VAXclusters

To be an alternate load host, each VAXcluster member must fulfill all the requirements of a single VMS system. To establish a VAXcluster member as an alternate load host, follow these steps:

1. Install the distribution software onto one cluster member, as detailed in Section 2.5. Since the distribution files are in SYS$COMMON:[DECSERVER] all cluster members have access to them.
2. Follow the steps in Section 4.5 to keep each member's database properly updated.
3. Perform a license load on each node of the cluster where LAN Traffic Monitor is installed. See Section 1.4 for instructions on loading a software license.

3.4 Editing the System Startup File

Add the following command to your node or cluster's system startup procedure, SYSTARTUP_V5.COM:

```
$ @SYS$SYSROOT:[DECSERVER]LTM$SETUP
```

The LTM$SETUP procedure defines system-wide values for the LTM logical names. (The LTM logical names are discussed in the *LAN Traffic Monitor User's Guide*.) The LTM$SETUP procedure does the following:

a. Defines LTM$USER to be SYS$LOGIN

b. Defines LTM$GLOBAL to be SYS$SYSROOT:[DECSERVER]

c. Defines LTM$LAN_DEVICE to be the name of the first Ethernet controller device found by LTM$SETUP

For most systems, these default assignments are adequate. In the case where a single node has multiple Ethernet controller devices, further customization may be necessary. The above logicals allow LTM users to customize the location of LTM's data files. See the *LAN Traffic Monitor User's Guide* for more information.

If your node is a load host, add the following command to your system startup procedure:

```
$ @SYS$SYSROOT:[DECSERVER]LTM$LOAD_CONFIG RESTORE
```

Refer to Section 4.6 for details on using the RESTORE parameter in your system startup procedure.

4
Configuring the Load Host's Node Database

This chapter explains how to configure a VMS load host's node database to support specific LTM Listener units. You must configure this database before you can down-line load an LTM Listener's software image to the LAN Bridge 100 or LAN Bridge 150 unit.

LTM$LOAD_CONFIG.COM is an automated menu-driven procedure you can use to define new LTM Listeners in the load host's node database. You can also use LTM$LOAD_CONFIG to delete and modify database entries for LTM Listeners and to copy entries from this database to the DECnet load database. **Configuring** the load host's node database means adding, swapping, or deleting LTM Listener entries in the LTM$LOAD_DB.DAT file.

The LTM installation placed LTM$LOAD_CONFIG.COM in the SYS$SYSROOT:[DECSERVER] directory for single systems and for VAXcluster member nodes.

4.1 Overview of LTM$LOAD_CONFIG

You can perform the following tasks using LTM$LOAD_CONFIG:

- List LTM Listener units that are currently defined in the load host's node database.
- Add an entry for a new LTM Listener unit.

  Adding an entry supplies information that identifies the LTM Listener unit on the Ethernet and thus establishes this system as a load host for the new unit.

- Swap an existing LTM Listener unit for a new one or redefine an existing LTM Listener's DECnet identifiers.

  Swapping retains the DECnet node address of an existing bridge unit, replacing its Ethernet address with the Ethernet address of a new unit. You can also use this option to replace other DECnet identifiers, either for a new LAN Bridge 100 or LAN Bridge 150 unit or for an existing one.

- Delete an entry for an existing LTM Listener.

  Deleting an entry prevents your VMS system from recognizing the LTM Listener. Thus, the VMS system is no longer a load host for that unit. Use this option to delete a database entry when you reconfigure the network or assign a Listener to another load host.

- Restore existing units to your DECnet load database.

  Restoring units copies entries from the load host's node database to the DECnet load database. Use this option when you routinely copy your local DECnet database from a central DECnet database that does not include LTM Listener units.

Here is the LTM$LOAD_CONFIG Menu with its list of options:

```
            LTM Listener Configuration Procedure

                 Menu of Options

               1 - List known LTM Listeners

               2 - Add an LTM Listener

               3 - Swap an existing LTM Listener

               4 - Delete an existing LTM Listener

               5 - Restore existing LTM Listeners

          <CTRL/Z> - Exit from this procedure
```

4.1.1 Databases Affected by LTM$LOAD_CONFIG

The LTM$LOAD_CONFIG procedure operates on three databases:

1. The load host's node database. This database is also the *LTM Listener database* and is sometimes referred to as the *down-line load database*. It contains the information you see when you select Option 1, List, from the LTM$LOAD_CONFIG menu.
2. The operational DECnet load database.

3. The permanent DECnet load database.

When you run LTM$LOAD_CONFIG, LTM Listener information is transferred from the load host's node database to the DECnet database. It is important that these two databases remain synchronized.

The LTM$LOAD_CONFIG procedure automatically keeps these databases in synchronization. Even though LTM$LOAD_CONFIG includes several NCP commands, do not execute them yourself in order to configure the load host's node database because NCP affects only the network's DECnet operational database.

4.1.2 Other LTM$LOAD_CONFIG Functions Needed for Down-Line Loading

LTM$LOAD_CONFIG also prepares your node as a load host by enabling SERVICE on the service circuit. SERVICE must be enabled before a down-line load can occur.

4.2 Specifying DECnet Characteristics

Several DECnet characteristics identify LTM Listener (LAN Bridge 100 or LAN Bridge 150) units. DECnet uses these characteristics for down-line loading. For each new unit, you must specify the following characteristics:

- DECnet node name
- DECnet node address
- Service circuit
- Ethernet address

The LAN Bridge 100 or LAN Bridge 150 information that you must specify should be available from the bridge installer or maintainer. Be sure that the Ethernet address is always entered correctly.

Note that the LAN Bridge 150 has two Ethernet addresses, one for each port. See the *LTM Release Notes* for information about determining the Ethernet address for LTM use on the LAN Bridge 150.

4.2.1 DECnet Node Name

Each LAN Bridge 100 or LAN Bridge 150/LTM Listener unit has a unique DECnet node name. This name must have from 1 to 6 alphanumeric characters, with at least one letter. For example, LTM2 and GORGON are valid DECnet node names.

The network manager assigns DECnet node names. During the LAN Bridge 100 or LAN Bridge 150 hardware installation, the network manager records the DECnet node name for each bridge unit.

4.2.2 DECnet Node Address

Each LAN Bridge 100 or LAN Bridge 150 unit has a unique DECnet node address. This number must be a decimal number from 1 to 1023. Your DECnet network might be divided into areas. If so, this number becomes part of each node address. With defined areas, each DECnet node address takes the form *aa.nnnn*.

Here, *aa* is the node area, a decimal number from 2 to 63; *nnnn* is the node address. The period delimits area from address. For example, 17.1003 is a valid DECnet node address. If you omit the area, the area of the current load host is used by default.

The network manager assigns DECnet node addresses. During the hardware installation, the network manager records the DECnet node address for each bridge unit.

4.2.3 Ethernet Hardware Address

Each LAN Bridge 100 unit is delivered with a unique Ethernet hardware address. Each LAN Bridge 150 unit is delivered with two addresses. Each address is twelve hexadecimal digits in the form *nn-nn-nn-nn-nn-nn*. For example, 08-00-01-00-AB-CD is an address with a valid format.

The Ethernet address or addresses are on the rear panel of the bridge unit. During the hardware installation, the installer records the Ethernet address for each bridge unit. For the LAN Bridge 150, see the *LTM Release Notes* for information about determining the bridge hardware address.

4.2.4 Service Circuit

The load host has a service circuit-ID that corresponds to each Ethernet controller.

Service Circuit-ID	Ethernet Controller
UNA-*n*	DEUNA (Digital Ethernet UNIBUS Network Adapter) and DELUA (Digital Ethernet Large-Scale-Integration UNIBUS Adapter)
QNA-*n*	DELQA, DEQNA, and DESQA (Digital Ethernet Q-BUS Network Adapter)
BNT-*n*	DEBNA and AIE (Built-in Ethernet controller on binary systems; also known as DEBNT)
SVA-*n*	DESVA

Here, *n* is an integer (typically 0).

When you run LTM$LOAD_CONFIG to add or swap more than one unit, the procedure asks you to specify the service circuit several times. The first time you are asked, the default is the service circuit for the processor type of your VMS load host. If you respond by specifying a different service circuit, that response becomes the default until you either specify another service circuit or you exit the procedure.

The possible values for each CPU type are listed in the table below.

CPU Type	Service Circuit-ID
VAX-11/730, 750	UNA-0
VAX-11/780, 785	UNA-0
VAX 8600, 8650	UNA-0
VAX 6xxx	UNA-0
VAX 8250, 8350	BNT-0
VAX 8500, 8700, 8800	BNT-0
VAX 8530, 8550	BNT-0

CPU Type	Service Circuit-ID
MicroVAX II	QNA-0
MicroVAX 3300, 3400	QNA-0
MicroVAX 3500, 3600	QNA-0
MicroVAX 3800, 3900	QNA-0
MicroVAX 2000, VAXstation 2000	SVA-0
VAXstation 3100, 3150	SVA-0

If your CPU supports more than one Ethernet controller, the service circuit-ID number might be something other than zero.

4.3 Preparing to Run the Configuration Procedure

Before you run the configuration procedure, do the following:

1. Check that DECnet Phase IV is running.
2. Check that DECnet NCP is installed.
3. Check that the SYS$SYSROOT:[DECSERVER] directory has all the distribution software installed in it. See Appendix B for a list of the distribution files.
4. Ask the hardware installer for the necessary information for each new unit:
   - DECnet node name
   - DECnet node address
   - Ethernet address (see the *LTM Release Notes* for information about determining the address of the LAN Bridge 150)

   The preceding information is necessary to answer prompts during LTM$LOAD_CONFIG.

   You can check the uniqueness of a name or address with the following NCP SHOW NODE command (the MCR NCP command runs NCP):

```
$ MCR NCP
NCP> SHOW NODE node-name CHARACTERISTICS
```

or

```
NCP> SHOW NODE node-number CHARACTERISTICS
```

5. Check that the directory SYS$COMMON:[DECSERVER] exists, for VAXcluster nodes. If not, create this directory now with the command:

```
$ CREATE SYS$COMMON:[DECSERVER]/PROTECTION=(S:RWED,O:RWED)
```

4.4 LTM$LOAD_CONFIG Conventions and Requirements

LTM$LOAD_CONFIG is an interactive procedure. When you start LTM$LOAD_CONFIG, a menu of options is displayed. Within the Add, Swap, and Delete options, you get a series of questions. After each question, the default response, if there is one, is shown in brackets ([ ]). At the end of each question, either a colon (:) or a question mark (?) appears. The following list tells you how to use LTM$LOAD_CONFIG:

- To select an option, type a menu number and press Return.
- To answer a question, type your response immediately after the colon or question mark, then press Return.
- To respond to a question with the default answer, simply press Return.
- To get help after any question, type a question mark (?). After the help display, the question is repeated.
- To exit an option without making any changes, type Ctrl/Z. You are returned to the LTM$LOAD_CONFIG Menu.
- To exit LTM$LOAD_CONFIG at the menu level, type Ctrl/Z. You are returned to the DCL prompt.

LTM$LOAD_CONFIG has some additional conventions and requirements:

- When you finish an option, LTM$LOAD_CONFIG automatically returns you to the LTM$LOAD_CONFIG Menu.
- At the end of the Add, Delete, and Swap options, you might get NCP messages (information, confirmations, and errors). In the case of error messages, the operation might not have been successful. For the meanings of these messages, see the *VMS System Messages and Recovery Procedures Reference Manual*.

- To run LTM$LOAD_CONFIG on a single system, the distribution software must already be installed on that system. For a VAXcluster node, the distribution software can be installed on any node of the cluster, not necessarily the node where you run the procedure.

4.5 Running LTM$LOAD_CONFIG

To run LTM$LOAD_CONFIG.COM, you need SYSPRV and OPER privileges. To start LTM$LOAD_CONFIG:

1. Log into the SYSTEM account, or any account with OPER and SYSPRV privileges.
2. Enter the following commands:

```
$ SET DEFAULT SYS$SYSROOT:[DECSERVER]

$ @LTM$LOAD_CONFIG
```

3. LTM$LOAD_CONFIG determines whether DECnet is running and whether NCP is installed. If DECnet is down or NCP is missing, LTM$LOAD_CONFIG prints a warning message and waits. If you receive a warning, exit LTM$LOAD_CONFIG immediately and correct the problem. You must have DECnet running and NCP installed to continue this procedure.
4. If SYS$SYSROOT:[DECSERVER] does not contain LTM$LOAD_DB.DAT, the procedure creates the file and displays this message:

```
The database file LTM$LOAD_DB.DAT could not be found.

A new one is being created.
```

5. LTM$LOAD_CONFIG informs you that each LTM Listener unit must have a unique DECnet node name and DECnet node address.
6. LTM$LOAD_CONFIG then asks whether you want to continue or to exit:

```
Press <RETURN> to start, or <CTRL/Z> to exit...
```

   Press Return if you have the information you need for each LAN Bridge 100 or LAN Bridge 150/LTM Listener unit:

   - DECnet node name for Add, Swap, and Delete options
   - DECnet node address for Add option
   - Ethernet address for Add and Swap options

- Service circuit-ID for Add and Swap options

7. LTM$LOAD_CONFIG then displays:

```
            LTM Listener Configuration Procedure

                  Menu of Options

               1 - List known LTM Listeners

               2 - Add an LTM Listener

               3 - Swap an existing LTM Listener

               4 - Delete an existing LTM Listener

               5 - Restore existing LTM Listeners

          <CTRL/Z> - Exit from this procedure

      Your selection?
```

Type the number that corresponds to the option you want and press Return. The next subsections discuss these options.

4.5.1 List Known LTM Listeners (Option 1)

Select Option 1 to list the LTM Listener units in the node database. Type the number 1 to select this option and press Return. The contents of the LTM$LOAD_DB.DAT file are displayed in a list like the one that appears below:

```
DECnet  DECnet  Service
Address Name    Circuit  Ethernet Address
------- ------- -------- -----------------

28.1001 TUNA    UNA-0    08-00-2B-02-24-CC
28.1002 SHRIMP  UNA-0    08-00-2B-04-AA-2B
28.1003 CONCH   UNA-0    08-00-2B-02-24-DD

Total of 3 Listeners defined.

(Press RETURN for menu)
```

This information makes up the load host's node database for LTM Listener/LAN Bridge 100 or LAN Bridge 150 units, which the load host uses for performing down-line loads to LAN Bridge 100 or LAN Bridge 150 units.

4.5.2 Add an LTM Listener (Option 2)

Select Option 2 to add an entry for a new LTM Listener unit in the node database. To create an entry, you must supply:

- A unique DECnet node name for the unit
- A unique DECnet node address for the unit
- The Ethernet address of the unit
- The service circuit

To add a unit, follow these steps:

1. Type the number 2 to select this option and press Return.
2. LTM$LOAD_CONFIG asks for the DECnet node name:

   ```
   DECnet node name for unit?
   ```

   Specify the DECnet node name for the new unit.
3. LTM$LOAD_CONFIG asks for the DECnet node address:

   ```
   DECnet node address for unit?
   ```

   Specify the DECnet node address for the new unit.
4. LTM$LOAD_CONFIG asks for the Ethernet address:

   ```
   Ethernet address of unit?
   ```

   Specify the Ethernet address of the new unit.
5. LTM$LOAD_CONFIG asks for the DECnet Service Circuit-ID:

   ```
   DECnet Service Circuit-ID [default-id]?
   ```

   Press Return if the service circuit needed to down-line load this Listener is the same as the default shown in square brackets in the prompt. If it is not, specify the service circuit of your Ethernet controller type:

   - UNA-*n* for DEUNA or DELUA
   - QNA-*n* for DELQA, DEQNA, or DESQA
   - BNT-*n* for DEBNA or AIE
   - SVA-*n* for DESVA

Here, *n* is an integer (typically 0 or 1). See Section 4.2.4 for a discussion of service circuits.

LTM$LOAD_CONFIG adds the entry for the new LTM Listener unit to the database and sets SERVICE ENABLED on the circuit supporting the Ethernet controller, both necessary for the load host to down-line load the LTM Listener software image to the LAN Bridge 100 or LAN Bridge 150 unit.

NOTE

If you get an error from DECnet while you are adding an LTM Listener unit, the entry is added to the LTM$LOAD_DB.DAT file (the load host's node database), even though it is not entered in the DECnet database. To correct this synchronization problem, follow these steps:

1. Select Option 4 to delete the entry.
2. Fix the condition causing the DECnet error.
3. Select Option 2 to add the LTM Listener unit again.

If you specify a node address that is already defined in the load host's node database, you get a LTM$LOAD_CONFIG error, nothing is added, and the Add option is terminated. Check the DECnet node address of the new unit.

4.5.3 Swap an Existing LTM Listener (Option 3)

Select Option 3 to swap an existing unit with a new one. Swapping is useful if you need to replace a unit that malfunctions. When you replace units, Swap retains the DECnet node address of the original unit.

Swapping is also helpful for renaming units and changing other DECnet characteristics. Option 3 lets you modify these DECnet characteristics for both new and existing units:

DECnet Characteristic	Default
Listener type	LTM
DECnet node name	The name of the unit you are replacing
Ethernet address	There is no default. You must specify the Ethernet address. See the *LTM Release Notes* for information about determining the Ethernet address of the LAN Bridge 150.
DECnet service circuit	The service circuit of the unit you are replacing

To swap an existing unit or to modify any DECnet characteristics, follow these steps:

1. Type the number 3 to select this option and press Return.
2. LTM$LOAD_CONFIG asks for the DECnet node name:

   ```
   What is the DECnet node name of the LTM Listener you want to swap?
   ```

   Specify the DECnet node name of the existing unit that you want to replace or modify.
3. LTM$LOAD_CONFIG displays:

   ```
   LTM Listener at Ethernet address nn-nn-nn-nn-nn-nn is being modified.
   ```

   Enter the new Ethernet address and any other DECnet characteristics you want to modify.
4. LTM$LOAD_CONFIG asks for the DECnet node name:

   ```
   DECnet node name for unit [default-name]?
   ```

   Press Return if you want the replacement unit to have the same DECnet node name as the original one. If you are changing node names, specify the name of the new unit and press Return.
5. LTM$LOAD_CONFIG asks for the Ethernet address:

   ```
   Ethernet address of unit?
   ```

   Specify the Ethernet address of the new unit you are adding or of the existing unit you are modifying.
6. LTM$LOAD_CONFIG asks for the DECnet Service Circuit-ID:

   ```
   DECnet Service Circuit-ID [default-id]?
   ```

Press Return if the replacement unit has the same service circuit as the old unit. If the circuits are different, specify the circuit of the new unit and press Return. Valid service circuit-IDs are:

- UNA-*n* for DEUNA or DELUA
- QNA-*n* for DELQA, DEQNA, or DESQA
- BNT-*n* for DEBNA or AIE
- SVA-*n* for DESVA

Here, *n* is an integer (typically 0 or 1). See Section 4.2.4 for a discussion of service circuits.

LTM$LOAD_CONFIG swaps the DECnet characteristics you just specified with the old ones for the unit with the same DECnet node address (this address cannot be swapped). LTM$LOAD_CONFIG also sets SERVICE ENABLED on the circuit supporting the Ethernet controller.

4.5.4 Delete an Existing LTM Listener (Option 4)

Select Option 4 to remove an entry from the database. Deleting an LTM Listener unit is useful if you are reconfiguring the network or changing load hosts for a unit. After you delete an LTM Listener unit from a load host's node database, the system is no longer a load host for that unit.

To delete units from the database, follow these steps:

1. Type the number 4 to select this option and press Return.
2. LTM$LOAD_CONFIG displays this prompt:

   ```
   Enter the DECnet node name of the LTM Listener entry you want to delete,
   or press <CTRL/Z> to return to menu ?
   ```

   Specify the DECnet node name of the unit you want to remove and press Return.

LTM$LOAD_CONFIG checks that the name you specified is an entry in the load host's node database. Then, it deletes this entry, reports the successful removal, and returns you to the menu. If the entry does not exist, LTM$LOAD_CONFIG informs you, terminates the Delete option, and returns you to the menu.

4.5.5 Restore Existing LTM Listeners (Option 5)

Select Option 5 to restore your load host's DECnet database to include the LTM Listeners in its node database. The Restore option affects both the operational and permanent DECnet databases.

If your DECnet network contains a large number of nodes, you might store your DECnet database on a central, remote node and copy this database upon each system startup. However, if many LAN Traffic Monitors exist on the network, Digital Equipment Corporation advises against defining these units in that central database.

If LTM Listeners are not defined in the central database, you must restore them whenever you copy your local DECnet database from the central DECnet database. Each time you copy the central DECnet database, use Option 5 to restore existing LTM Listener configurations.

Type the number 5 to select this option and press Return. The following messages confirm the restoration:

```
Restoring existing LTM Listeners to host DECnet database...

Host DECnet database successfully restored.
```

4.6 Restoring from Your Start-Up Procedure

You can restore your local DECnet database in another way, which you can automate. Run LTM$LOAD_CONFIG with the RESTORE parameter:

```
$ @SYS$SYSROOT:[DECSERVER]LTM$LOAD_CONFIG RESTORE
```

Using RESTORE bypasses the menu and lets you include this restoration in your system start-up procedures. If you want to restore units to the DECnet database at system startup, edit your system start-up file. Include the following statement in the appropriate place:

```
$ @SYS$SYSROOT:[DECSERVER]LTM$LOAD_CONFIG RESTORE
```

Note that the order of events is important. Edit your start-up procedure so that it follows this sequence:

1. DECnet is started.
2. All DECnet node names are defined.

3. Restore LTM Listener units with the following command:

```
$ @SYS$SYSROOT:[DECSERVER]LTM$LOAD_CONFIG RESTORE
```

For VAXcluster members that are alternate load hosts, you must keep each node database up to date. This is necessary for each member to continue to perform down-line loads. Every time you make database changes at one cluster member, follow this procedure:

1. Use LTM$LOAD_CONFIG to make database changes at *one* VAXcluster member.
2. Issue the following command at *each* cluster member:

```
$ @SYS$SYSROOT:[DECSERVER]LTM$LOAD_CONFIG RESTORE
```

4.7 Monitoring Down-Line Loading

DECnet down-line loading activity can be monitored through the DECnet event numbers 0.3 and 0.7. Consult your DECnet-VAX documentation for instructions on how to enable the DECnet event logging facility in order to observe these events.

A
Sample LAN Traffic Monitor Installation

This appendix contains a sample LAN Traffic Monitor installation.

```
$ @SYS$UPDATE:VMSINSTAL LTM012 MUA0: OPTIONS N

 VAX/VMS Software Product Installation Procedure V5.0-2


It is date at time.
Enter a question mark (?) at any time for help.
%VMSINSTAL-W-DECNET, Your DECnet network is up and running.
%VMSINSTAL-W-ACTIVE, The following processes are still active:
 NMCC$KERNEL
 NMCC_SERVER_1_0
 NMCC_SERVER_2_0
* Do you want to continue anyway [NO]? YES
* Are you satisfied with the backup of your system disk [YES]? YES

Please mount the first volume of the set on MUA0:.
* Are you ready?
%MOUNT-I-MOUNTED, LTM012 mounted on MTA0
The following products will be processed:
  LTM V1.2

Beginning installation of LTM V1.2 at time

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

    Release Notes Options:

 1.  Display release notes
 2.  Print release notes
 3.  Both 1 and 2
 4.  Copy release notes to SYS$HELP
 5.  Do not display, print or copy release notes
```

```
* Select option [2]: 2
* Queue name [SYS$PRINT]:
* Do you want to continue the installation? YES
* Do you want to purge files replaced by this installation [YES] ? YES
* Do you want to run the IVP after the installation [YES] ? YES

        Product:      LTM
        Producer:     DEC
        Version:      1.2
        Release Date: 05-JAN-1990

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

******************************************************************
The interactive part of the installation is over. There are no
more operator questions.
******************************************************************

**********************************************************************

The files in the distribution kit will be copied to the
appropriate system directories.

File                          System directory
----------------------        ----------------
LTM$SETUP.COM                 SYS$COMMON:[DECSERVER]
LTM$LOAD_CONFIG.COM           SYS$COMMON:[DECSERVER]
LTM$TYPE_NAME.DAT             SYS$COMMON:[DECSERVER]
LTM$MC_NAME.DAT               SYS$COMMON:[DECSERVER]
LTM$ADDR_NAME.DAT             SYS$COMMON:[DECSERVER]
LTMLIS0200.SYS                SYS$COMMON:[DECSERVER]
LTM$REGRESSION.COM            SYS$COMMON:[SYSTEST.LTM]
LTM$REGRESSION.BMK            SYS$COMMON:[SYSTEST.LTM]
LTM$IVP.COM                   SYS$COMMON:[SYSTEST]
LTM$UI.EXE                    SYS$SYSTEM:
LTM012.RELEASE_NOTES          SYS$HELP:
----------------------        ----------------

                              NOTE

  PLEASE place the command "$ @SYS$SYSROOT:[DECSERVER]LTM$SETUP"
  in SYS$MANAGER:SYSTARTUP_V5.COM to initialize LTM logical names
  at system boot time. Place it after the DECnet startup command.

**********************************************************************

 ************************************************************************

 By default, LTM files will be placed in the SYS$COMMON:[DECSERVER]
 directory.  If the following LTM user updateable files are found in the
 SYS$COMMON:[DECSERVER] directory, no new installation files will be copied
 over them:
```

```
    File Name
    ---------
    LTM$ADDR_NAME.DAT
    LTM$TYPE_NAME.DAT
    LTM$MC_NAME.DAT

 If the following file is found in the SYS$COMMON:[DECSERVER] directory, it
 will be copied by this installation:

     Old File Name                          New File Name
     -------------                          -------------
     LTM$SETUP.COM;                        LTM$SETUP.OLD_COM;

 NOTE: If you run in a cluster common environment and change or copy newly
       tailored files in the LTM directory, you may wish to check whether any
       files exist in the system specific directory.  These system specific
       files will overide files created during the installation of LTM V1.2.
       Also, these files will not be accessible from all nodes in the cluster.
       You may wish to move these files to the common directory once the
       installation completes.

       This installation will warn you if it finds any LTM files in the
       SYS$SPECIFIC:[DECSERVER] directory.
 ******************************************************************************

%VMSINSTAL-I-SYSDIR, This product creates system disk directory
     VMI$ROOT:[SYSTEST.LTM].
%CREATE-I-EXISTS, VMI$ROOT:[SYSTEST.LTM] already exists
%VMSINSTAL-I-MOVEFILES, Files will now be moved to their target directories...

The LAN Traffic Monitor V1.2 Installation Verification Procedure
is now beginning. The LTM IVP takes at most 1 minute to complete.

LAN Traffic Monitor V1.2 initialization procedure
%DCL-S-SPAWNED, process ONUS_1 spawned
%DCL-S-ATTACHED, terminal now attached to process ONUS_1
%DCL-S-RETURNED, control returned to process _RTA1:

The LAN Traffic Monitor V1.2 Installation Verification Procedure
has completed successfully.

 Installation of LTM V1.2 completed at time

Enter the products to be processed from the next distribution volume set.
* Products:

 VMSINSTAL procedure done at time
```

B
LAN Traffic Monitor Distribution Files

For VMS kits, the following are the LAN Traffic Monitor software distribution files:

File Name	Description
LTMLIS0200.SYS	LAN Traffic Monitor software image (in default state)
KITINSTAL.COM	Command file that VMSINSTAL uses to do part of the installation procedure
LTM$LOAD_CONFIG.COM	Configuration procedure for LTM Listener entries in the node database of the load host
LTM$UI.EXE	LTM User Interface program
LTM012.RELEASE_NOTES	LAN Traffic Monitor release notes
LTM$TYPE_NAME.DAT	Shareable file of names for Ethernet protocol types
LTM$MC_NAME.DAT	Shareable file of names for multicast addresses
LTM$ADDR_NAME.DAT	Shareable file of names for Ethernet node addresses
LTM$SETUP.COM	Procedure to initialize LTM logical names during system startup
LTM$IVP.COM	Installation Verification Procedure for LTM