MPH

Installation Guide

October 1995

This guide describes how to install the Monitoring Performance History (MPH) kit on both OpenVMS AXP and OpenVMS VAX systems.

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digital

Contents

PREFACE

Purpose Of This Guide.

This guide describes how to install the Monitoring Performance History (MPH) kit for both OpenVMS AXP and OpenVMS VAX systems.

Who Should Read This Guide

This guide is for system managers who want to install MPH.

Structure of This Guide

This guide has five chapters, five appendices, and an index.

- Chapter 1 briefly describes MPH.
- Chapter 2 describes how to prepare for the MPH software installation.
- Chapter 3 describes how to install the MPH software.
- Chapter 4 describes post installation considerations.
- Chapter 5 Glossary
- Appendix A contains a sample MPH installation.
- Appendix B lists the files and logical names installed on the system.
- Appendix C contains a systems list template.
- Appendix D contains details on how to install MPH using DECnet as the MPH transport method.
- Appendix E contains a kit contents list.

Scope of This Guide

This guide provides information on how to install Monitoring Performance History (MPH) kit for OpenVMS VAX and OpenVMS AXP.

The guide does not provide information on the delivery of the Monitoring Performance History (MPH) kit to the installer.

For further information on MPH or the Digital Product Performance group please send mail to DPPSYS::ADMIN or MPH_ADMIN@DPPSYS.ENET.DEC.COM.

Conventions

The following conventions are also used in this guide:

Ctrl/x	A sequence such as Ctrl/x indicates that you must hold down the key labelled Ctrl while you press another key or pointing device button.
italic text	Italic text indicates complete titles of manuals, emphasises important information, and indicates variables. Variables include information that varies in system messages (Internal error number), in command lines *(/PRODUCER=name),* and in command parameters in text *(" . . . where device-name contains up to five alphanumeric characters").*
	Italic text is also used to indicate messages and prompts displayed by your system or commands that you enter at the system prompt.
. .	Vertical ellipsis points indicate the omission of items from a code example or command format; the items are omitted because they are not important to the topic being discussed.
UPPER-CASE TEXT	Upper-case text indicates a command, the name of a routine, the name of a file, or the abbreviation for a system privilege.
Note	A note contains information that is of special importance to the reader.
Numbers	All numbers in text are assumed to be decimal unless otherwise noted. Non decimal radixes binary, octal, or hexadecimal are explicitly indicated

1 What is MPH ?

MPH (Monitoring Performance History) is part of the Digital Product Performance Program, which monitors and verifies the in-field performance of Digital systems. This information is used to influence engineering improvements, leading ultimately to higher system reliability.

1.1 MPH Functions.

MPH is comprised of a suite of command procedures, which performs three main functions:

- Copies error logs to the copy area (MPH$COPY) on the customer system on a regular basis.

- Takes a profile of the crash dump as the system reboots (if the crash dump is enabled and present) and places the profile in the copy area (MPH$COPY).

- Extracts the hardware configuration of a cluster to a file in the copy area (MPH$COPY).

MPH copies the error log and crash dump information once per week to Digital.
The hardware configuration of the cluster is also copied weekly to verify reliability against configuration.

1.2 MPH Transfer Methods.

MPH can use one of four file transfer methods:

- DSNlink: If the cluster is running DSNlink, the files in MPH$COPY area of the system are transferred by DSNlink to the CSC. The files are then copied from the CSC to the Digital processing site via Digitals internal network.

- Internet: Systems with access to the Internet can mail the files held in the MPH$COPY area directly to the Digital processing site.

- DECnet: Customer systems that are not running DSNlink or Internet must be connected via DECnet to another cluster that is running MPH and DSNlink. The MPH files are transferred to the MPH$COPY area of the second cluster and are copied from there to the CSC via DSNlink.

- EASYnet - **(Digital internal systems)** The files in the MPH$COPY area are transferred directly to the Digital processing site using Digitals internal network.

A list of transport methods available as the MPH file transport method will be displayed. The installer will be prompted to enter from the list the preferred transport method.

2 Preparing to Install the MPH Software.

This chapter describes the preparations and requirements necessary for installing the MPH software. The following information is provided:

- How to obtain the system serial numbers
- Required operating system versions
- Prerequisite software
- Installation procedure requirements

2.1 Obtaining the System Serial Numbers

The MPH software can be installed on a standalone system or from any node within a VMScluster. The system serial number is the number displayed on the back of the systems CPU cabinet (for example, AY20053729). Before you begin to install the MPH software, do the following:

- If you are installing MPH in a cluster wide environment, obtain the node name and serial number for each system that you want to monitor using MPH. Enter the node name and serial number in the systems list form supplied in Appendix C.

_____ Note _____

If the cluster has both OpenVMS AXP and OpenVMS VAX nodes, then the MPH kit must be installed twice once to monitor OpenVMS AXP nodes and once to monitor OpenVMS VAX nodes in the cluster.

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- If you are installing MPH on a stand alone system, obtain the node name and serial number for the system. Enter the node name and serial number in the systems list form supplied in Appendix C.

2.2 Required Operating Systems Versions.

The MPH software requires Version 5.0 or higher of the OpenVMS VAX operating system or any version of the OpenVMS AXP operating system.

2.3 Prerequisite Software

If DSNlink is to be used as the MPH transfer method, please refer to the following table as a guide for software requirements:

Software Required For Use of DSNlink as the MPH Transport Method

System Type	Required DSNlink Software
Standalone OpenVMS VAX system	DSNlink Version 1.1 or higher.
Standalone OpenVMS AXP system	DSNlink Version 1.2 for OpenVMS AXP or higher.
OpenVMS VAXcluster	DSNlink Version 1.1 or higher.
OpenVMS AXP cluster	DSNlink Version 1.2 for OpenVMS AXP or higher.
Mixed cluster	DSNlink Version 1.1 or higher and DSNlink Version 1.2 for OpenVMS AXP or higher on appropriate nodes in the cluster. You must assign unique names to the DSNlink batch queues.

_____ Note _____

For a cluster with multiple system disks, there is an additional step at the end of the MPH installation procedure. See Section 4.8 for more information.

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2.4 Installation Procedure Requirements.

The following sections discuss various requirements for installing the MPH software.

2.4.1 Time.

The MPH installation takes approximately 5 minutes, depending on your type of media and your system configuration.

2.4.2 Privileges

To install MPH, you must have the SETPRV privilege.

2.4.3 Disk Space

MPH's requirements for free disk storage space are different during installation and after installation. Digital recommends that you do not install MPH on the system disk. If you want to install MPH on a cluster with multiple system disks, the MPH target device must be accessible by those systems that you want to monitor.

Table 2-1 summarises the storage requirements for MPH.

Table 2-1 Disk Space Requirements

Kit	Blocks During Installation	Blocks After Kit Installation
MPH_VMS Version 1.4	1200	300 per node

The installation procedure checks that enough disk space is available on the disk, to install MPH. If there is insufficient space to install MPH the following warning message will be displayed:

" Not enough free blocks to install MPH"

The installation will then terminate and a VMS installation failure message will be displayed. For more information on the contents of the MPH kit please see the kit contents list in Appendix E.

2.4.4 System Parameters

The DUMPBUG system parameter must be set to the value of 1 to enable the full functionality of MPH, including the collection of crash log information. (Digital recommends that DUMPBUG be set to 1 whether or not MPH is installed.) If the DUMPBUG is set to a value other than 1, MPH will collect only error logs.

The installation procedure checks that the DUMPBUG system parameter is set to 1. If this parameter is not set to 1 the following warning message will be displayed:

"Warning ! DUMPBUG Parameter is 0, Dumps are disabled"

*"For **CRL/CLUE** to operate, dumps must be enabled'*

CRL will be the crash collection software installed if the system is a VAX system running a version of OpenVMS<V6.0. On any other system CLUE will be invoked as the crash collector.

2.4.5 Checking System Parameter Values

To check the values of your system parameters, enter the following command at the DCL prompt:

> *$ RUN SYS$SYSTEM:SYSGEN*
> *SYSGEN>*

This command invokes the System Generation Utility (SYSGEN). At the SYSGEN> prompt, enter the SHOW command to display the value of a system parameter. The following example displays the value for the DUMPBUG system parameter:

SYSGEN> SHOW DUMPBUG

After checking the parameters with the SHOW command, enter the EXIT command at the SYSGEN> prompt to return to DCL level.

2.4.6 VMSINSTAL Requirements

VMSINSTAL performs the following:

- Checks if you are logged into a privileged account

- Determines if you have adequate quotas for installing MPH

    VMSINSTAL requires that the installation account have
    the following minimum quota values:

    - ASTLM = 24

    - BIOLM = 18

    - BYTLM = 18,000

    - DIOLM = 18

    - ENQLM = 30

    - FILLM = 20

- Checks whether any users are logged in to the system

- Checks whether DECnet is operating on the system

If VMSINSTAL detects either of these conditions during the MPH installation, it notifies you and asks if you want to continue the installation. Enter No or press Return to stop the installation process and correct the situation. You can restart the installation as soon as the problem is fixed.

2.4.7 Backing Up Your System Disk

At the beginning of the installation, VMSINSTAL asks if you have backed up your system disk. Digital recommends that you do a system disk backup before installing any software. Use the backup procedures that are established at your site. See the operating system documentation on the Backup utility for information on performing a system disk backup.

3   Installing the MPH Software

This chapter explains how to install MPH and outlines the errors that may arise during the installation. It contains the following information:

- The MPH installation procedure

- Error conditions

3.1 MPH Installation Procedure

The MPH installation procedure consists of a series of questions and informational messages. See Appendix A for a sample installation procedure.

To abort the installation procedure at any time, press Ctrl/Y. When you press Ctrl/Y, the installation procedure deletes all files it has created up to that point and then returns you to the DCL prompt. You can then restart the installation.

Invoking VMSINSTAL.

To start the installation, invoke the VMSINSTAL command procedure from a privileged account, such as the SYSTEM account. VMSINSTAL is in the SYS$UPDATE directory. Use the following format:

$ @SYS$UPDATE:VMSINSTAL MPH_VMS014 device-name

The following defines the parameters of the VMSINSTAL command procedure:

device-name

Is the name of the device on which you plan to mount the media. For example, MTA0: is the device name for a tape drive. It is not necessary to use the console drive for this installation. However, if you do use the console drive, you must replace any media that you removed as soon as the installation is complete.

The following example invokes VMSINSTAL to install MPH_VMS V1.4 from tape drive MTA0: and shows the system response.

$ @SYS$UPDATE:VMSINSTAL MPH_VMS014 MTA0:

VAX/VMS Software Product Installation Procedure V6.1

It is 19-Jul-1995 at 15.45

Enter a question mark (?) at any time for help. If you do not supply either the product name or the device name, VMSINSTAL prompts you for this information later in the installation procedure.

Confirm System Backup.

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

If you are satisfied with the backup of your system disk, press Return. If you are dissatisfied, enter No to discontinue the installation. Back up your system disk, and then restart the installation.

Mount the Media.

Please mount the first volume of the set on MTA0:
* Are you ready? YES

%MOUNT-I-MOUNTED, MPH_VMS MOUNTED ON

$$MTA0: (NODE 1)

The following products will be processed:
MPH_VMS V1.4

> *Beginning installation of MPH_VMS V1.4 at 20:01*

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

VMSINSTAL prompts you to mount the first distribution volume on the device you specified when you invoked VMSINSTAL.VMSINSTAL then asks if you are ready to continue with the installation:

 If Yes is entered to indicate that you are ready, VMSINSTAL displays a message indicating that the media containing the MPH_VMS V1.4 software is mounted on the specified device and that the installation has begun. If you entered the wrong device name when you invoked VMSINSTAL and need to restart the installation, enter No in response to the following question:

* Are you ready? NO

If you want to abort the installation for other reasons, press **Ctrl/Y.**

Determine if the System is a Digital Internal System.

The following question will be asked:

* Is this system a Digital internal system? (Y/N) [N]:

This question is used to help to establish which transport methods may be available for use as the MPH transport method.

Enter Customer Agreement for Monitoring.

A description of the monitoring program is displayed to the screen, and you are asked if you agree to have your systems monitored:

* Do you agree to have your system(s) monitored by this program? (Y/N) [Y]:

If No is entered at this point, the installation stops and exits to the DCL prompt. However if you agree to have your systems monitored using the MPH software tool, the installation continues.

MPH Upgrade.

The MPH software is designed to detect whether MPH is already installed on the system. If MPH is already installed on the system the installer will be asked:

* MPH is already installed. Do you want to upgrade MPH on this system? (Y/N) [Y]:

If No is entered at this point, the installation stops and exits to the DCL prompt. If yes is entered to agree to upgrading MPH on the system the version of MPH which was already installed will be shutdown and the following message will be displayed.

> *The version of MPH which was already installed on this system has been shutdown.*

Installing Remote performance Monitoring Software (RPM).

RPM is an extra piece of software for systems running field test versions of OpenVMS VAX or OpenVMS AXP. The MPH software checks to see if the system is running a field test version of OpenVMS VAX or OpenVMS AXP.

If the system is running a field test version of the operating system then RPM will also be installed. However, if the system parameter MAXPROCESSCNT is set to greater than 977 then RPM will not be installed.

The RPM software collects performance data from systems in the field. The data collected from RPM will be used by Digital to develop an understanding, through monitoring, of average customer system performance trends, particularly how they relate to reliability.

RPM has been developed to benefit both our customers and Digital. The RPM data collected will enable Digital Engineering to make more informed design decisions and to gain early visibility of system performance problems leading to more timely corrective action and resolution.

Enter the MPH Transport Method.

The installer will be offered a list of transport methods for use as the MPH transport method. The installer will be prompted to enter the preferred transport method for MPH from the list provided.

For example if the system is a Digital Internal system the following message will be displayed:

The following transport method(s) are available to copy MPH files to Digital:

D = DSNlink

I = Internet

If the system is an external customer system and DECnet is detected the following transport method will also be offered:

C = DECnet to another cluster running MPH with DSNlink

The installer will then be asked to:

* Choose the transport method to be used by entering the appropriate letter:

If a letter other than one which represents a transport method offered on the list is entered the following message will be displayed:

The COPY transfer method is not suitable for this MPH kit.

The installer will then be asked again to choose a transport method.

If the installer enters return leaving the MPH transport method undefined the following message will be displayed:

Please choose a transport method from the list that has been offered.

The installer will then be asked again to choose a transport method.

Data Collection

The installer will be asked to enter whether they wish the error log data to be collected on a weekly or daily basis:

* Do you want data collected from your system on a daily basis (normally weekly) (Y/N) [N]:

The error log data is normally collected on a weekly basis. Enter N or press return to ensure the data is collected on a weekly basis. The error log data can be collected on a daily basis if preferred. Enter Y to ensure the error log information is collected on a daily basis.

Enter customer details.

If the system(s) MPH is/are being installed on belongs to a company external to Digital VMSInstall prompts the installer to enter the following data:

- *Please enter the customer name:*

The following information will then be displayed:

I hereby agree to participate in the technical monitoring program (DPP). In doing so, I acknowledge that the software is proprietary to Digital, and will not be given to third parties without written permission from Digitals DPP Program Office.

- *Signed:*
- *Please enter your job title:*
- *Please enter your telephone number:*
- *Please enter your internet mail address if available:*
- *Please enter the site name:*
- *Please enter the site address:*
- *Please enter the country in which the company is situated:*
- *Please enter the name of the Digital engineer, if applicable:*
- *Please enter the Digital Engineer's telephone number, if applicable:*

Additionally, if DSNlink was chosen as the MPH file transport method the installer is prompted to:

- *Please enter your DSNlink registration address if known:*

Additionally, if DSNlink or DECNet was chosen as the MPH file transport method the installer is prompted to:

- *Please enter the connecting Digital CSC:*

If the system(s) you install MPH on is/are Digital internal systems VMSInstal prompts you to enter the following:

- *Please enter your name:*
- *Please enter your DTN number:*
- *Please enter your e-mail address:*
- *Please enter the Digital group you work for:*
- *Please enter your Digital location code:*

The customer details are saved in a file called MPH$INSTALL.DAT. The file is copied to the Digital processing site so that Digital can match the data coming from the systems with the correct customer information.

Determining Installation Type.

When installing MPH on a cluster the following question will be asked:

> ** Do you want to monitor more than one node in the cluster? (Y/N) [Y]:*

If you answer yes, the following will be displayed:

The serial number for each of these nodes must also be entered. It is very important that these serial numbers are entered correctly for data correlation purposes in the MPH database. Please ensure that only nodes of a single operating system type are listed in this file.

If you wish to add/remove a node to/from the list of monitored nodes after installation then run *MPH$AREA:MPH$EDIT_NODES.COM* and add/delete the appropriate node.

If you answer no, the following will be displayed:

> *It is very important that the serial number for this system is entered correctly for data correlation purposes in the MPH database.*

If DSNlink was chosen as the MPH file transport method the following will be displayed:

Please ensure that you include the node that is running DSNlink when you enter the nodes to be monitored. MPH cannot run unless this node is included in the list of monitored nodes.

Enter List of Nodes to be Monitored.

If this cluster consists of both OpenVMS VAX and AXP nodes, then MPH must be installed twice. Install MPH_VMS V1.4 once on an OpenVMS VAX node to monitor the OpenVMS VAX nodes in the cluster. Install MPH_VMS V1.4 once on an OpenVMS AXP node to monitor the OpenVMS AXP nodes. The target device for the second installation **MUST** be different than that selected during the first installation.

The serial number for each of the nodes must be entered correctly. It is very important that these serial numbers are entered correctly for data correlation purposes in the MPH database.

You will be required to:

* Enter a node name to be monitored: e.g. NODEA

* Enter the serial number for node NODEA:

If you do not enter the serial number for a node the following message will be displayed:

> *A random serial number 12034455 has been generated for your system.*

* Enter the system type for NODEA DEC3000 Model 300L:

Additional Information and Questions for Installing MPH with DSNlink.

If the installer chooses DSNlink as the transfer method the system displays the following information and questions.

If this is a homogeneous cluster, DSNlink must be on one node in the cluster. If it is a heterogeneous cluster, DSNlink must be on one OpenVMS VAX node and one OpenVMS AXP node and the two DSNlink batch queues must be uniquely named.

The following question will be displayed:

* From which node do you want the DSN_COPY job to run ?

If you are installing MPH on a VAX system to monitor VAX nodes, enter the node name of the VAX system which is running DSNlink version 1.1 or higher. If you are installing MPH on an ALPHA AXP system to monitor Alpha AXP nodes, enter the node name of the Alpha AXP system running DSNlink version 1.2 for OpenVMS AXP or higher.

If the node name you input as the DSN_COPY node is not included in the list of nodes to be monitored the following message will be displayed:

NODEA is not included in your list of nodes to be monitored

MPH cannot run unless the node running DSNlink is included as one of the monitored nodes. Please re-enter the nodes to be monitored and include the node running DSNlink.

The installer is again asked to enter the node they wish to run the DSN_COPY job.

The following message will be displayed if the node which is to run the DSN_Copy job is valid.

NODEA will run the DSN_Copy job and the monitored nodes are as follows:

NODEA AY20053729 DEC3300-L

NODEB   AY20053730 DEC3300-L

Additional Questions When using Internet as the MPH file Transport Method.

If Internet was chosen as the MPH file transport method the following information will be displayed:

ATTENTION

You have chosen Internet as the MPH file transport method.

The mph files should be mailed to the DPP group
at the following Internet address:

dpp@dppsys.enet.dec.com

The format of the return DPP Internet mail address will depend
on the TCP/IP implementation your system is running, for example:

smtp%"dpp@dppsys.enet.dec.com"

The installer is then prompted t*o:*
* Please enter the full DPP internet return address:

The following information is then displayed:

An internet mail distribution list mph$area:mph_internet.dis

has been created on your system. If you have any problems mailing the files

using Internet to DPP please check that the address in

mph$area:mph_internet.dis is correct.

Information and Questions For Internal Digital Systems.

If your system is a Digital internal system and EASYnet has been chosen as the MPH transfer method the installer will be asked:

* Is this system on a hidden area? (Y/N) [N]:

If yes is entered the installer will be asked to :

* Enter a node that is known to EASYnet and to the monitored system:

Verify installation type information.

The system serial number, node name and system type of each node entered to be monitored will be printed to screen. The installer will then be asked to verify that this information is correct.

* Is this information correct (Y/N) [Y]:

If the installer enters Yes, the installation procedure displays a number of informational messages that report on the progress of the installation. If No is entered, the installation procedure prompts the installer to re-enter the nodes names, serial numbers, and system types of the systems to be monitor.

Select target device for MPH software.

The MPH directory structure will now be created. The following information will be displayed:

Creating [MPH...] directory structure...

If this cluster consists of both OpenVMS VAX and Alpha AXP nodes, then MPH must be installed twice. This kit must be installed once on an OpenVMS VAX node to monitor OpenVMS VAX nodes and once on an OpenVMS AXP node to monitor OpenVMS AXP nodes.

*The target device for the second installation **MUST** be different than that selected during the first installation.*

The MPH software and temporary files are stored on a user-defined disk. It is recommended that you do not specify the system disk.

The installer must:

* Enter the target device for the MPH Directory:

VMSINSTAL prompts the installer to enter the target device. The target device stores the MPH software and any temporary work files before they are copied to the CSC. See Table 2-1 for details about storage requirements. Appendix B lists the specific MPH logicals defined on the system.

When MPH is first invoked it makes a copy of the systems error log.sys file and copies this to the Digital processing plant. During installation MPH checks to ensure that there is enough space on the target device to hold the copy of the systems current error log until it is copied successfully to the Digital processing plant.

If there is space on the target disk an error message will be displayed and the installer will be asked the following question:

MPH makes a copy of your current error log.sys file. There is not enough space on the disk you have selected as the target device to do this.

* Do you want to enter another device ? (Y/N)

If you answer no to this question the installation will terminate and a VMSInstall failure message will be displayed.

Select Target Directory for MPH Software

The installer must enter the target directory for the MPH files and to verify that the directory chosen is satisfactory. A directory MPH on the device entered as the target device for MPH files will be given as a default.

* Enter target directory [DUA0:[MPH]]:

* MPH will be put in directory DUA0:[MPH]. Is this satisfactory? (Y/N) [Y]:

The default directory for this question is [MPH] on the chosen target device e.g. target device = DUA0 then the default directory will be DUA0:[MPH]. If you are upgrading to a new version of MPH where a previous version was already installed on the system, the default directory will be the directory previously used for MPH.

It is not necessary for MPH to be a top level directory on the target disk. You may wish the MPH directory to be at a lower level e.g. DUA0:[AES.MPH]

The following information will then be displayed:

> *Defining MPH$AREA and MPH$DISK logicals.*

End of installation procedure.

All of the necessary information for MPH to be installed has now been gathered. The rest of the installation now involves the software building a number of executable files and creating the MPH$STARTUP and MPH$DEINSTAL command files.

At this point in the installation if the system is a VAX system running a version of OpenVMS <V6.0 the following information will be displayed:

> *Now linking the CRL images*

If the MPH transport method to be used is internet the following message will be displayed:

> *Now linking the encoder image*

The following information will be displayed:

> *Now linking the error log compressor image*
> *Now linking the error log Collector images*
> *Creating MPH$STARTUP.com*

During the building of the executable files and command files the following failure messages may occur. If one of these failure messages occurs the installation will terminate and a VMSInstal failure message will be displayed:

- *This kit requires 'C' run time libraries to be installed.*
- *Could not link the CRL Image. Exiting the MPH program.*
- *Could not locate ELOG_DAY.EXE. Exiting the MPH program*

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REMEMBER

WHEN INSTALLATION IS COMPLETE:

1. EDIT THE STARTUP FILE(S) TO INCLUDE @SYS$STARTUP:MPH$STARTUP

2. MPH WILL START ON YOUR CURRENT NODE ONLY - PLEASE START MPH ON ALL OTHER SPECIFIED NODES.

3. IF THIS IS A MIXED CLUSTER, PLEASE INSTALL THE MPH KIT ON A DIFFERENT TARGET DEVICE TO MONITOR NODES RUNNING THE OTHER OPERATING

SYSTEM

If the system is NOT a Digital internal system the following information will be displayed:

4. SEND MAIL TO MPH_ADMIN@DPPSYS.ENET.DEC.COM IF YOU HAVE ANY QUESTIONS ABOUT THE KIT OR DPP

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The following message indicates that the entire installation procedure is complete:

> *Installation of MPH_VMS V1.4 completed at 10:00*
>
> *VMSINSTAL procedure done at 10:00*

This installation does not start MPH cluster wide. Please start MPH on all chosen nodes by invoking SYS$STARTUP:MPH$STARTUP.COM on these nodes.

Starting MPH Using SYSMAN

The following example shows how to start MPH on all chosen nodes using SYSMAN:

```
$ MC SYSMAN
SYSMAN>SET ENVIRONMENT/NODE=(NODEB,NODEC)
SYSMAN>DO @SYS$STARTUP:MPH$STARTUP.COM
SYSMAN>EXIT
```

Note that the OPER privilege is required to run SYSMAN.

_____ Note _____

VMSINSTAL deletes or changes entries in the process symbol tables
during the installation. If you are going to continue using the system
manager's account and you want to restore these symbols, you must
log out of the account and log in again.

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3.2 Error Conditions

VMSINSTAL displays failure messages if errors occur during the installation or when the
IVP is operating during the installation. If the installation fails, the following
message is displayed:

%VMSINSTAL-E-INSFAIL, The installation of MPH_VMS V1.4 has failed.

If the IVP fails, you see the following messages:

The MPH_VMS V1.4 Installation Verification Procedure failed.

%VMSINSTAL-E-IVPFAIL, The IVP for MPH_VMS V1.4 has failed.

Errors can occur during the installation if one or more of the following conditions exist:

- The operating system version is incorrect (see Section 2.2 for more information)

- Quotas necessary for a successful installation are insufficient (see Section 2.4.6 for
  more information)

For descriptions of the error messages generated by these conditions, see the operating
system documentation about system messages, recovery procedures,and software
installation procedures. If you are notified that any of these conditions exist, you must take
the appropriate action as described in the message. See Chapter 2 for information about the
MPH installation requirements.

3.3 MPH Safeguards and Warning Messages

3.3.1 DSNlink Problem Warning

When MPH has been installed and the transport method chosen is DSNlink, if problems occur when trying to copy MPH files via DSNlink a mail message will be sent to the system account. The subject header of the mail will read:

MPH: ''X' errors encountered with DSNlink

On receiving such a message the system manager should investigate the DSNlink problem and if unable to resolve the problem should contact their Digital Engineer.

3.3.2 Error Log Collection And Copying Safeguards

When MPH is installed the first time the error log collector is invoked the systems whole error log is normally copied. If at this point the error log is larger than 25,000 blocks the whole error log will not be copied to Digital. This is a safeguard to ensure that MPH does not impact on the system or disk space.

The MPH error log collector collects changes to the error log on a daily basis and appends this data into a file containing the logged events for a week, MPH ELOGS.sys. If this is the first day of the week MPH$ELOGS.sys is created. If the changes to the error log in a day are greater than 2500 blocks the data will not be recorded in MPH$ELOGS.sys and the system manager will be sent a warning mail message. The subject header of the mail message will read:

MPH: large increase in error log size

4 After Installing the MPH Software

This chapter describes tasks that you may perform after installing the MPH software. Review the following tasks, and perform those appropriate to the system:

- Editing the system startup file

- Maintaining the MPH$NODES.DAT file

- Maintaining the MPH$BATCH_NODE node

- Invoking the Installation Verification procedure (IVP)

- Maintaining the MPH process names

- Running MPH on a cluster with multiple system disks

This chapter also describes the following:

- MPH startup procedure

- MPH error log collector

- MPH shutdown procedure

4.1 Editing the System Startup File

The installer must edit the system startup and shutdown files to provide for automatic startup or shutdown of MPH when a system is rebooted. To start MPH, add the following command line to the system startup file or cluster startup file:

$ @SYS$STARTUP:MPH$STARTUP.COM

MPH cannot start until after the network has started. This new command line must be positioned after the line that invokes the network startup command procedure.

If DSNlink is used to transfer the files, then MPH cannot be invoked until after DSNlink has started. The following example shows the network startup and the DSN startup command lines followed by the MPH startup command line:

$ @SYS$MANAGER:STARTNET.COM

$ @SYS$STARTUP:DSN$STARTUP.COM

$ @SYS$STARTUP:MPH$STARTUP.COM

4.2 Maintaining the MPH$NODES.dat File

If you want to add or remove a node from the MPH monitoring program, you must do the following:

$set def MPH$AREA

$@MPH$EDIT_NODES.COM

4.2.1 Removing A Node

When the command file MPH$EDIT_NODES.COM is run to remove a node the user will be asked:

* Do you want to add or remove a node (A/R/E (exit)): R

* Enter the name of the node you want to remove:NODEA

* Do you want to remove any more nodes (Y/N)?: N

This will remove the requested node from the MPH$NODES.DAT file.

4.2.2 Adding A Node

When the command file MPH$EDIT_NODES.COM is run to add a node the user will be asked:

* Do you want to add or remove a node (A/R/E (exit)): A

* Enter the name of the node you want to add: NODEB

* Enter the serial number for NODEB: AY20053730

* Enter the system type for NODEB:DEC3300-L

This will add the requested node to the MPH$NODES.DAT file.

4.3 Maintaining the MPH$BATCH_NODE Node

The MPH$BATCH_NODE system wide logical points to the node that copies all the files from the MPH$COPY area to the CSC. If DSNlink is the transfer method, this node has access to the DSNlink batch queue. If, for some reason, this node no longer has access to DSNlink, then you must redefine the MPH$BATCH_NODE logical to point to a new node in the cluster:

$ DEFINE/SYSTEM MPH$BATCH_NODE new_node_name

where: new_node_name is the name of the node that has access to DSNlink.

Also, remember to update the file SYS$STARTUP:MPH$STARTUP.COM with the new node name.

4.4 Invoking the Installation Verification Procedure

The Installation Verification Procedure (IVP) is invoked during the installation. The IVP can be invoked independently from the MPH installation to ensure the integrity of the installed files.

_____ Note _____

The IVP invokes the MPH startup procedure. Before starting the
IVP, you must first run the MPH shutdown procedure. See
Section 4.11 for more information about the MPH shutdown
procedure.

_____

To invoke the IVP execute the following command procedure:

$ @SYS$TEST:MPH$IVP

The IVP performs the following:

- Invokes the MPH startup procedure
- Checks for the MPH$AREA system wide logical
- Ensures that the error log collection processes are active on the system

4.5 Maintaining the MPH Process Name

MPH operates as a hibernating error log collector process and a hibernating error log transfer process. The collector process has either of the following names:

- ELOG_COLLECT_0
- ELOG_COLLECT_1

When using DSNlink as the MPH transfer method the transfer process has either of the following names:

- MPH$COLLECT_0
- MPH$COLLECT_1

The system manager should make sure that the error log collector process and error log transfer process are always present.

4.6 Running MPH on a Cluster with Multiple System Disks

When MPH is installed, three files are created on the system disk:

- *SYS$MANAGER:MPH$STARTUP.COM*
- *SYS$MANAGER:MPH$SHUTDOWN.COM*
- *SYS$MANAGER:MPH$DEINSTAL.COM*

Copy these three files from the system disk where MPH was installed to all other system disks on the cluster.

Modify the cluster startup procedure to reflect the correct location for the *SYS$STARTUP:MPH$STARTUP.COM* procedure.

4.7 MPH Startup Procedure

The MPH startup procedure defines some system logicals, listed in Appendix B. The procedure invokes the errorlog collector and begins the collection process ELOG_COLLECT_0.

The MPH$COLLECTOR job is invoked and is run as MPH$COLLECT_0 at 03:00 hours the following morning to copy the collected error logs to the CSC.

When MPH starts, CRL or CLUE is also invoked to extract the crash information from the system dump file. [1]

4.8 MPH Error Log Collector

Each day, MPH copies the entries from the system error log into a file. These daily files are appended to one weekly file. This weekly file is then subdivided into files of less than 500 blocks, the error log files are then compressed and copied to the CSC via DSNlink or if the MPH transport mechanism is Internet or EASYnet the files are copied direct to the Digital information processing site.

[1] CLUE is invoked on AXP systems and on VAX systems running OpenVMS VAX Version 6.0 or later. CRL is invoked on earlier VAX systems. CRL is installed on OpenVMS VAX 6.0 and above if CLUE is not installed.

The resultant files are stored in MPH$COPY and are named as follows:

- serial_number_ddmmmhhmmC.CMP

- serial_number_ddmmmhhmm_1C.CMP

- serial_number_ddmmmhhmm_2C.CMP

- serial_number_ddmmmhhmm_nC.CMP where:

ddmmmhhmm represents the day, month, and time of day the file is created. For example, the following is the first file for the system with the serial number AY20053729, created at 09:34 on 12 February:

AY20053729_12FEB0934C.CMP

(See Section 2.1 for more information on serial numbers.)

The MPH system logical *MPH$COLLECT_DAY* determines which day the weekly copy job is run. This logical can be modified as required, but the file SYS$STARTUP:MPH$STARTUP.COM must also be updated with the new day in upper-case, for example:

$ DEFINE/SYSTEM MPH$COLLECT_DAY "SATURDAY"

4.9 MPH Shutdown Procedure

You can stop MPH at any point by entering:

$ @SYS$MANAGER:MPH$SHUTDOWN

The MPH shutdown procedure checks the system for the existence of the MPH process names. See Section 4.7 for more information about MPH process names. If either or both processes are active on the system, they are stopped.

_____ Note _____

The MPH shutdown procedure deassigns all MPH system wide logicals.

_____

5 Glossary

MPH - Monitoring Performance History

RPM - Remote performance Monitoring

CSC - Connecting Service Centre

CRL - CRash Log

CLUE - Crash Log Utility Extractor

DCL - Digital Command Language

APPENDIX A Sample Installation

Sample Installation

This appendix contains a sample installation of MPH_VMS V1.4 on an OpenVMS AXP system using DSNlink. The Installation Verification Procedure (IVP) is invoked at the end of the installation.

$ @SYS$UPDATE:VMSINSTAL

OpenVMS ALPHA Software Product Installation Procedure V 6.1

It is 19-JUL-1995 at 15:45

Enter a question mark (?) at any time for help.

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

 * Where will the distribution volumes be mounted: 1DUAX:[KITS]

Enter the products to be processed from the first distribution volume set.

* Products: MPH_VMS014

* Enter installation options you wish to use (none):

The following products will be processed: MPH_VMS V1.4

Beginning installation of MPH_VMS V1.4 at 15:45

%VMSINSTAL-I-RESTORE, Restoring product save set A ...

* Is this system a Digital internal system ? (Y/N) [N]: N

               DIGITAL PRODUCT PERFORMANCE PROGRAM

Digital, in its efforts to continue to provide high quality products, has developed system monitoring techniques to benefit both our customers and Digital.

Digital requests that you help by participating in the Digital Product Performance Program, which is in place to monitor and verify in-field   performance of Digital systems. This program provides our Service, Manufacturing, and Design Engineering organisations with accurate information on the performance of products at customer sites throughout product lifetime.

* Press RETURN to continue. [ ]:

If you agree to participate in the program, this installation of a small monitoring software utility (MPH) on your system(s) will continue. The MPH software will not impact or degrade your system performance. It will provide information which could improve your future system performance. The disk space required for the collected data is approximately 300 blocks per system. The monitoring software copies the week's entries in the system error log and, if a crash has occurred, a summary of the crash dump to Digital. The hardware configuration of the cluster is also copied over on a weekly basis in order to verify reliability against configuration. This data is internally secure to Digital and will be used exclusively for analysis purposes.

Digital looks forward to your participation in this mutually beneficial program. Thank you for your co-operation.

Please complete the following questions. These will be returned to Digital automatically if you decide to install this software.

* Do you agree to have your system(s) monitored by this program ? (Y/N) [Y]:Y

The following transport methods are available to copy MPH files to Digital:

 D=DSNlink/AES

 I=Internet

* Choose the transport method to be used by entering the appropriate letter.

* Do you want data collected from your system on a daily basis (normally weekly) (Y/N) [N] :N

* Please enter the customer name : DIGITAL EQUIPMENT SCOTLAND LTD.

I hereby agree to participate in the technical monitoring program (DPP). In doing so, I acknowledge that the software is proprietary to Digital and will not be given to third parties without written permission from Digitals DPP Program Office.

* Signed : LYNN RENFREW

* Please enter your job title : SOFTWARE ENGINEER

* Please enter your telephone number : 823-3478

* Please enter your internet mail address if available: renfrew@dppsys.enet.dec.com

* Please enter the site name: AYO

* Please enter the site Address: MOSSHILL INDUSTRIAL ESTATE, AYR

* Please enter the country in which the customer is situated: SCOTLAND

* Please enter the connecting Digital CSC: BASINGSTOKE

* Please enter your DSNlink registration address if known:

* Please enter the name of the Digital Engineer, if applicable [none]: LYNN RENFREW

* Please enter the Digital engineer's telephone number [none]: 823-3478

* Do you want to monitor more than one node in the cluster (Y/N)? [Y] : Y

The serial number for each of these nodes must be entered. It is very important that these serial numbers are entered correctly for the data correlation purposes in the MPH database. Please ensure that only nodes of a single operating system type are listed in this file.

If you wish to add/remove a node to/from a list of monitored nodes after the installation has completed then run the file MPH$AREA:MPH$edit_nodes.com and add/delete the appropriate node.

* Enter a node name to be monitored: NODEA

* Enter the serial number for node NODEA: AY20053729

* Enter the system type for NODEA (DEC 3000 Model 300L): DEC3300-L

* Do you want to enter another node ? (Y/N) : Y

* Enter a node name to be monitored: NODEB

* Enter the serial number for node NODEB: AY20053730

* Enter the system type for NODEB (DEC 3000 Model 300L) : DEC3300-L

* Do you want to enter another node? (Y/N) : N

If this is a homogeneous cluster, DSNlink must be on one node in the cluster. If it is a   heterogeneous cluster, DSNlink must be on one OpenVMS VAX node and one OpenVMS AXP node and the two DSNlink batch queues must be uniquely named.

* From which node do you want the DSN_COPY job to run?: NODEA

NODEA will run the DSN_COPY job and the nodes and serial numbers are as follows:

NODEA AY20053729 DEC3300-L

NODEB AY20053730 DEC3300-L

* Is this information correct ? (Y/N) [Y] : Y

 Creating [MPH...] directory structure...

If this cluster consists of both OpenVMS VAX and AXP nodes, then MPH must be installed twice. This kit must be installed once on an OpenVMS VAX node to monitor OpenVMS VAX nodes and once on an OpenVMS AXP node to monitor OpenVMS AXP nodes.

The target device for the second installation MUST be different than that selected during the first installation.

The MPH software and temporary files are stored on a user-defined disk. It is recommended that you DO NOT specify the system disk.

* Enter the target device for the MPH Directory: DUAX:

* Enter target directory [DUAX:[MPH]:

MPH will be put in directory DUAX:[MPH]. Is this satisfactory? (Y/N) [Y]: Y

Defining MPH$AREA and MPH$DISK Logicals

Now linking the error log compressor image

Now linking the error log collector images

Creating MPH$STARTUP.COM

****

REMEMBER

WHEN THE INSTALLATION IS COMPLETE:

1. EDIT THE STARTUP FILE(S) TO INCLUDE @SYS$STARTUP:MPH$STARTUP.

2. MPH WILL START ON YOUR CURRENT NODE ONLY - PLEASE START MPH ON ALL OTHER SPECIFIED NODES.

3. IF THIS IS A MIXED CLUSTER, PLEASE INSTALL THE MPH KIT ON A DIFFERENT TARGET DEVICE TO MONITOR NODES RUNNING THE OTHER OPERATING SYSTEM.

4. SEND MAIL TO MPH_ADMIN@DPPSYS.ENET.DEC.COM IF YOU HAVE ANY QUESTIONS ABOUT THE KIT OR DPP.

****

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

IVP Running....

Starting the detached process to collect the error logs

%RUN-S-PROC_ID, identification of created process is 000004BA

%RUN-S-PROC_ID, identification of created process is 000004BB

Installation of MPH_VMS V1.4 completed at 15:50

Adding History entry in VMI$root:[SYSUPD]VMSINSTAL.HISTORY

Creating Installation data file : VMI$root:[SYSOPD]MPH_VMS)!$VMIDATA

VMSINSTAL procedure done at 15.51

$ MC SYSMAN

SYSMAN>SET ENVIRONMENT/NODE=(NODEB, NODEC)

%sysman-I-ENV, current command environment:

       Individual nodes: NODEB, NODEC

       Username SYSTEM will be used on non local nodes

SYSMAN> DO @SYS$STARTUP:MPH$STARTUP

%DCL-S-SPAWNED, process SYSTEM_2 spawned

%SYSMAN-I-OUTPUT, command execution on node NODEB

%SYSMAN-I-OUTPUT, command execution on node NODEC

$ SET NOVERIFY

 SYSMAN>EXIT

APPENDIX B MPH Files and Logical Names

Files and Logical Names Installed on Your System

The MPH installation procedure installs a number of files on the system and defines logical names. Section B.1 lists the names of the installed files, and Section B.2 lists the logical names that are added to the system logical name table.

B.1 File Names

The following files are created on your system when MPH is installed:

- MPH$AREA:ELOG$COLLECT.COM
- MPH$AREA:ELOG_DAY.EXE
- MPH$AREA:ELOG_WEEK.EXE
- MPH$AREA:LZCOMP.EXE
- MPH$AREA:MPH$NODES.DAT
- MPH$AREA:MPH$EDIT_NODES.COM
- MPH$AREA:MPH$DEC_COPY.COM
- MPH$AREA:MPH$CONFIG.COM
- MPH$AREA:MPH$START.COM
- MPH$AREA:MPH_INTERNET.DIS - *This file exists only if internet is the chosen MPH file transfer method.*

- MPH$ELOGS:*'system serial number'*_DAY.IDX
- MPH$LOGS:ELOGS$COLLECT_*'system serial number'*.LOG
- SYS$MANAGER:MPH$SHUTDOWN.COM
- SYS$MANAGER:MPH$DEINSTAL.COM
- SYS$MANAGER:MPH$STARTUP.COM
- SYS$TEST:MPH$MPH$IVP.COM

The following file will be created on the system when MPH is installed if the system is an OpenVMS VAX system.

- MPH$AREA:CRL$STARTUP.COM

The following file will be created on the system when MPH is installed if the system is an OpenVMS AXP system.

- MPH$AREA:MPH_CLUE$STARTUP.COM

The following table describes the files associated with each of the four transfer methods:

Transfer Method	Files Created for Transferring Data
DSNlink	MPH$AREA:MPH$COLLECTOR.COM
Internet	MPH$AREA:MPH$COPY.COM
DECnet to another MPH cluster running DSNlink	MPH$AREA:MPH$NI_COPY.COM
Internal Digital installations	MPH$AREA:MPH$DEC_COPY.COM

Logical Names

MPH enters the following logical names into the system logical name table when you install MPH. These logicals are defined in the MPH startup file. They are automatically entered into the system logical name table when the system reboots or when the MPH software is invoked.

- MPH$AREA
- MPH$BATCH_NODE
- MPH$COLLECTION
- MPH$COLLECT_DAY
- MPH$COPY
- MPH$DISK
- MPH$ELOGS
- MPH$LOGS
- MPH$KIT
- MPH$TRANSFER

If the MPH transport method chosen was DECnet the following system logical is created:

- MPH$DEST

If the MPH transport method chosen is Easynet and the node is a hidden node the following system logical is created:

- MPH$HOP

APPENDIX C Systems List

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Systems List

Use the following list to enter the node name, serial number, and system type (CPU type) of the systems being monitored:

Node Name	Serial Number	System Type

_____

_____1

_____2

_____3

_____4

_____5

_____6

_____7

Systems List

APPENDIX D Transferring Files Using DECNet

Using DECnet to Transfer Files to a cluster with MPH and DSNlink Customer systems that are not running DSNlink must be connected via DECnet to another cluster that is running MPH and DSNlink.

To install MPH in this case, perform the following steps:

1. Install MPH_VMS V1.4 as appropriate on the cluster or node that uses DSNlink to transfer files to Digital. Specify DSNlink as the transfer method.

2. Install MPH_VMS V1.4 as appropriate on the other cluster or node that is networked to the cluster mentioned in step 1. Specify DECnet as the transfer method.

3. Input the name of the cluster/node to be used to return the data to Digital. This changes the copy destination (DEST) to the DECnet address of the cluster /node with DSNlink.

MPH$NI_COPY.COM requires privileges to copy the files from this cluster to the cluster with DSNlink. You can do this by setting up proxy access or through other means. Using DECnet to Transfer Files to a Cluster with MPH and DSNlink

APPENDIX E MPH Saveset Files

The following lists the files included in the MPH kit MPH_VMS014.a

DCL Command Files

- KITINSTAL.COM
- MPH$START.COM
- MPH$COLLECTOR.COM
- ELOG$COLLECT.COM
- CRL$STARTUP.COM
- MPH_CLUE$STARTUP.COM
- MPH$CONFIG.COM
- MPH$COPY.COM
- MPH$DEC_COPY.COM
- MPH$NI_COPY.COM
- MPH$DEINSTAL.COM
- MPH$SHUTDOWN.COM
- MPH$IVP.COM
- MPH$EDIT_NODES.COM
- RPM$COMPRESS.COM
- RPM$MONITOR.COM

.OBJ FILES

- CRL.OBJ
- CRL_CANASTA.OBJ
- CRL_DECODE.OBJ
- CRL_DISPLAY.OBJ
- CRL_EXTRACT.OBJ
- CRL_MAP.OBJ
- CRL_MODULES.OBJ
- CRL_MSG.OBJ
- CRL_STACK.OBJ
- CRL_SYMBOLS.OBJ
- DECODE.OBJ

- ELOG_DAY_AXP.OBJ
- ELOG_DAY_VAX.OBJ
- ELOG_WEEK_AXP.OBJ
- ELOG_WEEK_VAX.OBJ
- LZCMP1_ALPHA.OBJ
- LZCMP1_VAX.OBJ
- LZCMP2_ALPHA.OBJ
- LZCMP2_VAX.OBJ
- LZCMP3_ALPHA.OBJ
- LZCMP3_VAX.OBJ
- LZCOMP_VAX.OBJ
- LZDCL_ALPHA.OBJ
- LZDCL_VAX.OBJ
- LZIO_ALPHA.OBJ
- LZIO_VAX.OBJ
- LZVIO_ALPHA.OBJ
- LZVIO_VAX.OBJ
- VAXINST.OBJ
- VMENCODE_ALPHA.OBJ
- VMENCODE_VAX.OBJ

Executable Files

- RPM$COMPRESS_ALPHA.EXE
- RPM$COMPRESS_VAX.EXE

CRL Help Library File

- CRL.HLB

Text Files

- CRL.TXT
- MPH_OVMS_INSTALL_GUIDE.TXT

Postscript Files

- MPH_OVMS_INSTALL_GUIDE.PS