DECtrace for VMS

Installation Guide

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This manual describes how to install DECtrace for VMS Version 1.1.

Operating System:	VMS
Software Version:	DECtrace for VMS Version 1.1

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This document is available on CDROM.

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Preface

This document describes how to install the DECtrace for VMS Version 1.1 software. Note that the installation of the run-time and full-development kits are identical except for the particular license that is registered and loaded.

Intended Audience

This manual is intended for system managers.

Operating System Information

Information about the versions of the operating system and related software that are compatible with this version of DECtrace is included in the media kit, in either the Installation Guide or the Before You Install letter.

For information on the compatibility of other software products with this version of DECtrace refer to the System Support Addendum (SSA) that comes with the Software Product Description (SPD). You can use the SPD/SSA to verify which versions of your operating system are compatible with this version of DECtrace.

Structure

This manual has three chapters and three appendixes.

Chapter 1	Describes how to prepare for the installation.
Chapter 2	Describes how to install the DECtrace software.
Chapter 3	Describes what to do after the installation.
Appendix A	Provides a sample installation log.
Appendix B	Provides a sample deinstallation log.
Appendix C	Provides a list of all files created during the installation.

Related Documents

The other components of the DECtrace documentation set are:

- *DECtrace for VMS User's Guide*—Provides a detailed description of how to use the DECtrace software.
- *DECtrace for VMS Release Notes*—Provides additional information about DECtrace that was not included in the *DECtrace for VMS User's Guide*.
- *Getting Started with DECtrace for VMS*—Provides an introduction and overview to the DECtrace software.

Conventions

The special symbols used in this book are:

Symbol	Meaning
CTRL/x	This symbol tells you to press the CTRL (control) key and hold it down while pressing the specified letter key.
BOLD	Bold lettering in text indicates the definition of a new term.
[ ]	Brackets indicate optional elements.
. . .	Horizontal ellipsis in an example indicate that you can enter additional parameters, values, or information.
. . .	Vertical ellipsis in an example means that information not directly related to the example has been omitted.
$	The dollar sign is used to indicate the DCL prompt. This prompt may be different on your system.
`Color`	In printed manuals, color in examples shows user input.

References to Products

The DECtrace for VMS documentation often refers to products by their abbreviated names:

- DECtrace for VMS software is referred to as DECtrace.
- VAX Rdb/VMS software is referred to as Rdb/VMS.

1
Preparing to Install DECtrace

This chapter discusses the preparations and requirements necessary for installing DECtrace.

This manual applies to Version 1.1 of DECtrace for VMS and all subsequent maintenance releases up to the next major product release.

DECtrace provides online release notes. Digital strongly recommends that you read the release notes before proceeding with the installation. For information on accessing the online release notes, see Section 2.1.1

1.1 Required Operating System Components

To use DECtrace Version 1.1, your system must be running VMS Version 5.2 or higher.

VMS arranges all files into classes and subclasses. This allows customers to remove or add parts of VMS by function rather than by file. DECtrace requires the utilities (UTIL) tailoring class.

1.2 Prerequisite, Optional, and Incompatible Software

This section discusses the software you must have installed on your system before installing DECtrace. The section also includes information about optional software that you can use together with DECtrace.

1.2.1 Prerequisite Software

DECtrace Version 1.1 requires the following Digital software product:

- VAX Rdb/VMS Version 3.1B or VAX Rdb/VMS Version 4.0 or higher. The minimum required Rdb/VMS license is the run-time license. Note that this license is included with VMS Version 5.1 or higher, but you must order the Rdb/VMS H-kit to obtain the software.

1.2.2 Optional Software

DECtrace Version 1.1 is currently compatible with the following Digital software products:

- ALL–IN–1 Version 2.4
- VAX ACMS Version 3.1
- VAX DBMS Version 4.1 or higher

1.2.3 Incompatible Software

DECtrace replaces the ACMS Event Performance Collector (ACMS/EPC) that supported VAX ACMS Version 3.0 and Version 3.1. Due to major improvements in both functionality and performance introduced with DECtrace Version 1.0, the two products are not compatible. During the DECtrace installation procedure, any ACMS/EPC files on your system will be replaced by DECtrace files.

Note that DECtrace cannot collect data from VAX ACMS Version 3.0, but can collect from VAX ACMS Version 3.1.

1.3 License Registration

Two licenses are available for the DECtrace software: run-time and full-development. The installation procedure is the same for both kits.

You must register the DECtrace license through the VMS License Management Facility (LMF) in accordance with the license agreement signed by your site. The license registration information you need is contained in the Product Authorization Key (PAK) that is shipped with DECtrace. The PAK is a paper certificate that contains information about the license you have for a particular piece of software.

During the installation, the system asks if you have registered the DECtrace license and loaded the appropriate authorization key. You must register and load your license for DECtrace *before* you start the installation in order to successfully install the software and run the Installation Verification Procedure (IVP).

To register a license under VMS, first log in to the system manager's account, SYSTEM. You then have a choice of 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.
- Issue the LICENSE REGISTER command at the DCL prompt, using the appropriate qualifiers that correspond to the PAK information.

If you plan to use DECtrace on more than one node in a VAXcluster, you must perform a license load on the other nodes after you complete this installation. See Section 3.4 for information on this and other VAXcluster considerations.

For complete information on using LMF, see the manual on the License Management Utility in the VMS documentation set.

1.4 VAXcluster Considerations

To use DECtrace in a VAXcluster environment, specify EPC$ROOT (when prompted during the installation) to be on a common shared disk for all nodes that will run DECtrace.

To use DECtrace in a Mixed-Interconnect VAXcluster (MIVc) environment, you must perform the installation procedure on each of the system disks in the cluster. The DECtrace software distinguishes the group of nodes booted from each system disk as a separate cluster for cluster operations using DECtrace commands. Alternately, you can specify EPC$ROOT to point to an MIVc-wide accessible directory for all nodes comprising the MIVc. DECtrace would then treat all nodes in the MIVc as members of a single cluster.

1.5 Preparing Your System and the Installing Account

The following sections discuss various requirements for installing DECtrace.

1.5.1 Time

The installation takes approximately 10 to 20 minutes, depending on your type of media and your system configuration.

Installing DECtrace and running the IVP on a standalone VAX 11/780 system takes 20 minutes.

1.5.2 Privileges

To install DECtrace, you must be logged in to an account that has SETPRV or at least the following privileges: ALTPRI, BYPASS, CMKRNL, CMXPNL, DETACH, NETMBX, PRMGBL, SYSGBL, SYSLCK, SYSNAM, SYSPRV, TMPMBX, and WORLD

Note that VMSINSTAL turns off BYPASS privilege at the start of the installation.

1.5.3 Disk Space

The installation procedure checks your system during installation and determines whether you are in a cluster or standalone environment. On a standalone system, the installation creates a smaller administration database. Note that if you later add this standalone machine to a cluster, or build a cluster around the standalone node, you must reinstall the DECtrace software so that the installation procedure creates the larger, cluster administration database. See the EXTRACT DEFINITION command in the *DECtrace for VMS User's Guide* for information on how to move existing facility definitions from one administration database to another.

Table 1–1 summarizes the storage requirements during and after installation. Note that the requirements for an upgrade may be higher because the installation procedure attempts to convert existing history and administration databases to the new Version 1.1 format.

Table 1–1 Disk Space Requirements

Configuration	Blocks During Installation	Blocks After Installation
Standalone	18,300	11,300
Cluster	21,600	12,000

During the installation, you can specify to put the DECtrace root directory (EPC$ROOT) on any device that is accessible from all nodes in your cluster. Table 1–2 shows the disk space requirements for each device. You should plan for additional space on the EPC$ROOT device to accommodate the history database (EPC$HISTORY_DB) and any dump files created by DECtrace in the case of a bugcheck. Note that if disk quotas are enabled on the EPC$ROOT device, the EPC$SERVER account is given a quota of 100,000 blocks.

Table 1–2 Permanent Disk Space Requirements Using Two Devices

Configuration	System Disk	EPC$ROOT Disk	Total
Standalone	4,800	6,500	11,300
Cluster	4,800	7,200	12,000

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
```

1.5.4 System Parameters

Installing DECtrace requires certain system parameter settings. Table 1–3 lists the minimum required system parameter values for the installation. Depending on the kinds of programs and applications running at your site, you might need higher values for some settings.

Table 1–3 Required System Parameter Values

System Parameter	Value
CLISYMTBL[1]	250
GBLPAGES	105 available pages
GBLSECTIONS	8 available sections
LOCKIDTBL_MAX[2]	2048 entities
MAXBUF[2]	1200 bytes
PROCSECTCNT	32 sections
RESHASHTBL	512 entries
SRPCOUNTV	2048 packets
VIRTUALPAGECNT[3]	20000

[1]The CLISYMTBL dynamic system parameter must be set to a minimum value of 250 during the installation procedure. If the current CLISYMTBL setting is less than 250, you can lower the setting to its original value once the installation is finished.

[2]These dynamic system parameters must be set permanently to values equal to or greater than the values listed. Do not lower these values after the installation.

[3]This parameter should be set high to facilitate formatting of large data collection files and reporting on large formatted databases. You might need to raise this parameter to 50,000.

The following sections show you how to:

- Check system parameter values
- Calculate values for the GBLPAGES and GBLSECTIONS system parameters
- Change parameter values with the VMS AUTOGEN command procedure
- Set dynamic parameters (such as CLISYMTBL) with the VMS System Generation Utility (SYSGEN)

1.5.4.1 Checking System Parameter Values

To check the values of your system parameters, enter the following command at the DCL prompt to invoke the System Generation Utility:

```
$  RUN SYS$SYSTEM:SYSGEN
SYSGEN>
```

At the SYSGEN> prompt, enter the SHOW command to display the value of a system parameter. The values displayed should equal or exceed the values of the parameters listed in Table 1–3. The following command displays the value for the MAXBUF system parameter:

```
SYSGEN>  SHOW MAXBUF
```

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

1.5.4.2 Calculating the Values for GBLPAGES and GBLSECTIONS

To install and run DECtrace, you must have sufficient free global pages and global sections. You must first find out how many free global pages and sections you have on your system. Then use AUTOGEN if you need to increase the GBLPAGES and GBLSECTIONS system parameters.

Use the WRITE command with the F$GETSYI lexical function to find the number of free global pages and global sections. The following example shows how to get this information at your terminal (the default for SYS$OUTPUT):

```
$  WRITE SYS$OUTPUT F$GETSYI("FREE_GBLPAGES")
15848
$  WRITE SYS$OUTPUT F$GETSYI("FREE_GBLSECTS")
24
```

If the values displayed by the system are greater than the values in Table 1–3, you do not need to increase the values for these parameters. If the values of free global pages or global sections are less than the values in Table 1–3, you must increase the system parameter settings.

Section 1.5.4.3 describes the procedures for increasing these values by using AUTOGEN. Refer to the VMS System Management Subkit for information on using AUTOGEN.

1.5.4.3 Changing System Parameter Values with AUTOGEN

You use the AUTOGEN command procedure to change system parameters. AUTOGEN automatically adjusts values for parameters that are associated with the values you reset manually. To change system parameters with AUTOGEN, edit the following file:

```
SYS$SYSTEM:MODPARAMS.DAT
```

Use an editor to access the file. To change a parameter value that is already listed in this file, delete the current value associated with that parameter and enter the new value.

To add a new parameter, add a line to the file that includes both the name of the parameter and its value. For example:

```
WSMAX = 1024
```

To modify incremental parameters such as GBLPAGES and GBLSECTIONS, use ADD_. The following example increases the global page setting by 2000:

```
ADD_GBLPAGES = 2000
```

After you have made all your changes, exit from the editor and run the AUTOGEN procedure to recalculate your system parameters. Enter the following command at the DCL prompt:

```
$  @SYS$UPDATE:AUTOGEN GETDATA REBOOT
```

When you specify REBOOT, AUTOGEN performs an automatic system shutdown and then reboots the system when it has finished. Any users logged on to the system are immediately disconnected during the shutdown. The automatic reboot puts the new parameter values into effect.

The AUTOGEN Utility automatically adjusts some of the SYSGEN parameters based on the consumption of resources since the last reboot. If you do not want to take advantage of this automatic adjustment, include the /NOFEEDBACK qualifier on the AUTOGEN command line.

For more information about using AUTOGEN, see the VMS System Management Subkit.

1.5.4.4 Setting Dynamic System Parameter Values

You use the System Generation (SYSGEN) Utility to set dynamic parameters. Dynamic parameters changed with the SYSGEN WRITE ACTIVE command become active immediately without any need to reboot your system. In fact, rebooting returns dynamic system parameter values to their previous settings.

Once you change dynamic parameter values, you should complete the installation before rebooting the system. After you finish with the installation, you can reset the dynamic parameters to their previous values or let them reset automatically when you next reboot your system.

DECtrace requires the following dynamic parameter value:

- CLISYMTBL—250

If the dynamic parameter values on your system are less than the values previously listed, use the following series of commands to change the values. This example changes the CLISYMTBL value to 250:

```
$  RUN SYS$SYSTEM:SYSGEN
SYSGEN>  USE ACTIVE
SYSGEN>  SET CLISYMTBL 250
SYSGEN>  WRITE ACTIVE
SYSGEN>  EXIT
```

1.5.5 Process Account Quotas

The account you use to install DECtrace must have sufficient quotas to enable you to perform the installation. Table 1–4 summarizes the process quotas required for the installing account.

Table 1–4 Process Account Quotas for the Installing Account

Account Quota	Value
ASTLM	24
BIOLM	20
BYTLM	20480
DIOLM	20
ENQLM	1800
FILLM	50
PGFLQUO[1]	20000
WSEXTENT[1]	2048 or greater
WSQUOTA[1]	1024 or greater

[1]These parameters need to be set high to facilitate the formatting of large data collection files.

User account quotas are stored in the file SYSUAF.DAT. Use the VMS Authorize Utility to verify and change user account quotas. First set your directory to SYS$SYSTEM and then run AUTHORIZE:

```
$  SET DEFAULT SYS$SYSTEM
$  RUN AUTHORIZE
UAF>
```

At the UAF> prompt, use the SHOW command with an account name to check a particular account. For example:

```
UAF>  SHOW SMITH
```

To change a quota, use the MODIFY command. MODIFY has the following format:

MODIFY account-name /quota-name=NNN

The following example changes the FILLM quota for the SMITH account and then exits from the utility:

```
UAF>  MODIFY SMITH /FILLM=50
UAF>  EXIT
```

After you exit from the utility, the system displays messages indicating whether or not changes were made. Once the changes have been made, you must log out and log in again for the new quotas to take effect.

For more information on modifying account quotas, see the *VMS Authorize Utility Manual*.

1.5.6 VMSINSTAL Requirements

When you invoke VMSINSTAL, it checks whether or not you have:

- Set your default device and directory to SYS$UPDATE
- Logged in to a privileged account
- Provided adequate quotas for installation
- DECnet running
- Any users logged in to the system

See Table 1–4 for the minimum quotas required for the installation account. If VMSINSTAL detects any problems during the installation, it notifies you and asks if you want to continue the installation. In some instances, you can enter YES to continue. To stop the installation process and correct the situation, enter NO or press RETURN. Then correct the problem and restart the installation.

1.5.7 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 established at your site. For details on performing a system disk backup, see the *VMS Backup Utility Manual*.

1.5.8 DECtrace Requirements

During the installation procedure, the DECtrace software checks if:

- VAX Rdb/VMS Version 3.1B or VAX Rdb/VMS Version 4.0 or higher is installed, and the Rdb/VMS monitor process is active on the system. To start the Rdb/VMS monitor, issue the following command:

  ```
  $ @SYS$STARTUP:RMONSTART
  ```

- The DECtrace Registrar process is running, to learn if this is a reinstallation. For reinstallations, be sure to first stop the DECtrace Registrar process by issuing the following command on all nodes in the VAXcluster:

  ```
  $ COLLECT STOP SYSTEM/ABORT
  ```

  In addition, all users should exit from the DECtrace command environment. If any user is bound to the history or administration databases, the installation procedure will not be able to convert those files to the new Version 1.1 format.

- ACMS/EPC is installed on the system. For systems currently running ACMS/EPC, stop the Registrar process by issuing the following command:

  ```
  $ EVENT COLLECT SHUTDOWN
  ```

2
Installing DECtrace

This chapter describes how to install DECtrace. Section 2.2 contains a step-by-step description of the installation procedure.

2.1 General Information

This section includes information about the following topics:

- Determining files and logical names added to your system
- Running the Installation Verification Procedure (IVP)
- Aborting the installation

Note that the installation of the DECtrace run-time kit is identical to that of the full-development kit. The license that you install defines which functionality you have.

2.1.1 Accessing the Online Release Notes

DECtrace provides online release notes. You must specify OPTIONS N when you invoke VMSINSTAL to see the question about online release notes. This question comes near the beginning of the installation.

You should review the release notes in case they contain any information about last-minute changes in the installation procedure. If you are starting the installation over again and have already reviewed the release notes, you do not need to specify OPTIONS N.

Once DECtrace has been installed, the release notes are located in the following file:

```
SYS$HELP:EPC011.RELEASE_NOTES
```

Online help also directs you to the release notes file. After the installation is completed, you can enter the following command to display the location of the release notes:

```
$  HELP DECTRACE RELEASE_NOTES
```

2.1.2 Determining the Logical Names and Files Added to the System

The following logical names are defined on your system:

- EPC$ADMIN_DB
- EPC$DATABASE_DIR
- EPC$EXAMPLES
- EPC$HISTORY_DB
- EPC$HOME_DIR
- EPC$ROOT

See Appendix C for a list of all files created by the installation procedure.

To remove DECtrace from your system, use the deinstallation procedure in SYS$UPDATE:EPC$DEINSTAL.COM. See Section 3.8 for information.

2.1.3 Running the Installation Verification Procedure (IVP)

The Installation Verification Procedure (IVP) for DECtrace verifies the installation. During the installation, you are asked if you want to run the IVP as part of the installation. If you respond YES, VMSINSTAL runs the IVP. Digital recommends that you run the IVP to make sure that the DECtrace software is installed correctly.

After DECtrace is installed, you can run the IVP independently to verify that the software is available on your system. You might need to run the IVP after a system failure to make sure that users can access DECtrace.

2.1.4 Aborting the Installation

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 exits. You can then start the installation again.

2.2 The Installation Procedure

The DECtrace installation procedure consists of a series of questions and informational messages.

2.2.1 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 syntax to invoke VMSINSTAL:

```
@SYS$UPDATE:VMSINSTAL saveset-name device-name OPTIONS N
```

saveset-name

The installation name for the component. For DECtrace, use the following installation name:

```
EPC011
```

device-name

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 should replace any media you removed once the installation is complete.

OPTIONS N

An optional parameter that indicates you want to see the release notes question. If you do not include the OPTIONS N parameter, VMSINSTAL does not ask you about the release notes. You should review the release notes before proceeding with the installation in case they contain new information about the installation.

Note that there are several other options you can select when you invoke VMSINSTAL. See the VMS documentation on software installation in the VMS System Management Subkit for information on these options. If you specify more than one option, separate the options with commas (OPTIONS A,N).

The following example invokes VMSINSTAL to install DECtrace from tape drive MTA0: and shows the system response. This example uses the OPTIONS N release note parameter:

```
$  @SYS$UPDATE:VMSINSTAL EPC011 MTA0: OPTIONS N

      VAX/VMS Software Product Installation Procedure V5.2


It is 31-JAN-1991 at 17:09.
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. VMSINSTAL does not prompt you for any options, so be sure to include OPTIONS N on the VMSINSTAL command line to access the release notes during the installation.

2.2.2 Installation Questions

This section discusses the questions that appear during the installation. Appendix A contains a sample installation procedure showing how the questions can be answered.

Each question asked during the installation procedure is marked with an asterisk (*) at the beginning of the line. Some questions show the default response in brackets, for example [YES]. To use the default response, press the RETURN key.

1. Interactive login status

   VMSINSTAL displays a list of all active processes. It then asks if you want to continue the installation. NO is the default response to the question.

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

2. System backup

   VMSINSTAL asks if you are satisfied with your system backup. You should always back up your system disk before performing an installation. If you are satisfied with the backup of your system disk, press RETURN. Otherwise, enter NO to discontinue the installation. After you back up your system disk, you can restart the installation.

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

3. Mounting the media

   You should now mount the first distribution volume on the device you specified when you invoked VMSINSTAL. The device name appears in the line preceding the question. VMSINSTAL then asks you if you are ready to continue with the installation.

   If you respond YES to indicate that you are ready, VMSINSTAL displays a message that the media containing the DECtrace software has been mounted on the specified device and that the installation has begun. For example:

```
Please mount the first volume of the set on MTA0:.
* Are you ready?  YES
The following products will be processed:
  EPC V1.1

    Beginning installation of EPC V1.1 at 17:09

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

If you entered the wrong device name when you invoked VMSINSTAL and need to restart the installation, enter NO in response to the ''Are you ready?'' question. To abort the installation for other reasons, press CTRL/Y.

4. Additional media volumes

   If your installation kit contains more than one volume, VMSINSTAL prompts you to mount the additional volumes and then asks you to indicate that you are ready for the installation to proceed.

```
%BACKUP-I-READYREAD, mount volume 2 on _MTA0: for reading

Enter "YES" when ready:  YES
```

5. Release Notes

   If you specified OPTIONS N when you started the installation, VMSINSTAL asks a release notes question. There are four options under VMS Version 5.2 or higher.

   The display is as follows:

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

Additional Release Notes Options:

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

* Select option [2]:  2
```

   If you select option 1, VMSINSTAL displays the release notes immediately on the console terminal. You can terminate the display at any time 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 press RETURN to send the file to the default output print device or you can enter another queue name.

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

VMSINSTAL automatically copies the DECtrace release notes to the system help directory. The file specification is:

```
SYS$HELP:EPC011.RELEASE_NOTES
```

Select option 4 if you have already reviewed the release notes and are restarting the installation.

6. Continuing the installation

   The installation procedure now asks if you want to continue the installation. To continue, enter YES. Otherwise, press RETURN. In either case, the release notes are copied to a file in the SYS$HELP directory. For example:

```
* Do you want to continue the installation [N]?:  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:EPC011.RELEASE_NOTES
```

7. License Registration

   The installation procedure displays license information about your product and then asks if you have registered and loaded your authorization key for the DECtrace full-development license. For example:

```
Product:       DECTRACE
Producer:      DEC
Version:       1.1
Release Date:  25-APR-1991

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

   If you have not registered and loaded an authorization key for the DECtrace full-development license, you must answer ''NO'' to this question. If you answer ''NO'' the procedure then asks if you have registered and loaded the authorization key for the DECtrace run-time license. For example:

```
Product:       DECTRACE-RUNTIME
Producer:      DEC
Version:       1.1
Release Date:  25-APR-1991

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

You have to register and load your product authorization key to successfully complete the installation. If you have not done so, you should stop the installation, register and load your product authorization key, and then restart the installation.

8. Specifying the device for the DECtrace root directory

   You must specify a device for EPC$ROOT that is accessible from all nodes in your cluster. You usually put EPC$ROOT on your system disk, but you can use any disk that is accessible cluster-wide.

   The default file location for EPC$ROOT is SYS$SYSDEVICE:[EPC].

   If you are installing DECtrace in a Mixed-Interconnect VAXcluster (MIVc), specify EPC$ROOT to point to a cluster-wide accessible device for each group of nodes comprising the MIVc. DECtrace distinguishes each group as a separate cluster for cluster options on DECtrace commands. Alternately, you can specify EPC$ROOT to point to a device that is accessible MIVc-wide. DECtrace treats all nodes in the MIVc as members of a single cluster.

9. Allowing access to the administration and history databases

   With VAX Rdb/VMS Version 4.0 and higher, only creators of a database or users with BYPASS or SYSPRV privileges may read or modify a database. The DECtrace installation procedure allows you to grant non-privileged users access to the DECtrace administration and history databases.

```
* Do you want to add public access to the ADMINISTRATION
  database [Y/N]?  Y

* Do you want to add public access to the HISTORY database [Y/N]?  Y
```

   For reinstallations or upgrades from previous versions of DECtrace, the existing administration and history databases are converted to the new Version 1.1 format. Access to the files is automatically granted to all users.

10. Creating the EPC$SERVER account

    The installation requires an EPC$SERVER account. You must choose a unique UIC and password for this account. The UIC value, specified in octal, is a group and member number separated by a comma and enclosed in brackets. Digital recommends that you use a unique member from within the 376 UIC group. Use the VMS Authorize Utility to list the accounts within the 376 UIC group. For example:

```
$  SET DEFAULT SYS$SYSTEM
$  RUN AUTHORIZE
UAF>  SHOW/IDENTIFIER/USER=[376,*]

  Name                         Value           Attributes
  $MOM$SERVER                  [000376,000001] NORESOURCE NODYNAMIC
  PHONE$SERVER                 [000376,000372] NORESOURCE NODYNAMIC
  FAL$SERVER                   [000376,000373] NORESOURCE NODYNAMIC
  MAIL$SERVER                  [000376,000374] NORESOURCE NODYNAMIC
  NOTES$SERVER                 [000376,000377] NORESOURCE NODYNAMIC
```

Choose a unique member number for the EPC$SERVER account:

```
* Enter UIC to be used for EPC$SERVER
     account (e.g. [376,750]):  [376,750]
```

Next, you must specify a password for the new EPC$SERVER account. The password can be from 15 to 31 characters in length, and can include alphanumeric characters, dollar signs ($), and underscores (_). For security reasons, your input is not echoed on the terminal.

For reinstallations or upgrades from previous versions of DECtrace, the old EPC$SERVER account will continue to be used. However, you must still enter a new password for it.

```
* Please enter PASSWORD to be used for EPC$SERVER
  account:  ABCDEFGHIJKLMNOP

* Please verify the PASSWORD entered for EPC$SERVER:  ABCDEFGHIJKLMNOP
```

Note that if disk quotas are enabled on the EPC$ROOT device, the EPC$SERVER account is given a quota of 100,000 blocks.

11. Choosing to run the Installation Verification Procedure (IVP)

    The installation procedure now asks if you want to run the Installation Verification Procedure. The IVP for DECtrace checks to be sure that the installation is successful. Digital recommends that you run the IVP.

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

    If you have the DECtrace run-time license installed, the IVP does not test the DECtrace formatting or reporting functionality.

12. Choosing to purge files

    You have the option to purge files from previous versions of DECtrace 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.

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

If you answer ‘‘NO’’ and then choose to purge the DECtrace directories at some later time, note that some files are not replaced by the Version 1.1 installation and therefore will not be purged. You should delete the following files:

```
EPC$DATABASE_DIR:EPC$ADMIN_DB_AREA03.RDB
EPC$DATABASE_DIR:EPC$ADMIN_DB_AREA03.SNP
EPC$DATABASE_DIR:EPC$ADMIN_DB_AREA04.RDB
EPC$DATABASE_DIR:EPC$ADMIN_DB_AREA04.SNP
EPC$DATABASE_DIR:EPC$ADMIN_DB_AREA07.RDB
EPC$DATABASE_DIR:EPC$ADMIN_DB_AREA07.SNP
EPC$DATABASE_DIR:EPC$ADMIN_DB_AREA08.RDB
EPC$DATABASE_DIR:EPC$ADMIN_DB_AREA08.SNP
EPC$DATABASE_DIR:EPC$ADMIN_DB_AREA09.RDB
EPC$DATABASE_DIR:EPC$ADMIN_DB_AREA09.SNP
```

13. Converting the history and administration databases

    For reinstallations or upgrades from previous versions of DECtrace, the existing administration and history databases are automatically converted to the new Version 1.1 format.

    During the conversion of the administration database, the installation procedure checks for facility definitions with characteristics exclusive to DECtrace Version 1.0 and Version 1.0A, namely, events that are both point and duration. These facility definitions cannot be converted to the Version 1.1 format and must be deleted from the administration database. The installation procedure lists any illegal facility definitions and gives you the option of aborting the installation at that time. You can use the DECtrace DELETE DEFINITION command to remove the offending definitions and then restart the installation of DECtrace Version 1.1. If you choose to continue the installation without deleting the offending facility definitions, a new (empty) database is created and your old database is deleted.

    Note that if any user is bound to the history or administration databases, the installation procedure will not be able to convert the database.

2.2.3 Informational Messages

At this point, the installation procedure displays a number of informational messages that report on the progress of the installation. There are no further questions. If the installation procedure has been successful up to this point, VMSINSTAL moves the new or modified files to their target directories, updates help files, and updates DCL tables, if necessary. If you chose to have files purged, that work is done now. The following message is displayed:

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

2.2.4 Running the Installation Verification Procedure

If you chose to run the IVP, VMSINSTAL runs it now. When the IVP runs successfully, you see the following display:

```
*                                                                              *
*               DECtrace V1.1-0 IVP Completed Successfully                     *
*                                                                              *
********************************************************************************
```

The IVP procedure is stored in SYS$TEST. You can run it any time you want to confirm that DECtrace is performing correctly. Use the following command to execute the procedure:

```
$  @SYS$TEST:EPC$IVP
```

2.2.5 Completing the Installation Procedure

The following messages indicate that the VMSINSTAL procedure is complete:

```
Installation of EPC V1.1 completed at 17:30

VMSINSTAL procedure done at 17:30
```

You can now log out of the privileged account:

```
$  LOGOUT
SYSTEM     logged out at 31-JAN-1991 17:31:10.60
```

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

2.3 Error Recovery

If errors occur during the installation itself or when the IVP is running, VMSINSTAL displays failure messages. If the installation fails, you see the following message:

```
%VMSINSTAL-E-INSFAIL, The installation of EPC V1.1 has failed.
```

If the IVP fails, the error is displayed, immediately preceding these messages:

```
*                                                                              *
*           The DECtrace V1.1-0 IVP has failed.                                *
*           The reason for the failure is listed above.                        *
*                                                                              *
*           You should: 1. Correct the problem indicated                       *
*                       2. Execute $@SYS$TEST:EPC$IVP.COM                      *
*                                                                              *
*                                                                              *
********************************************************************************
```

Errors can occur during the installation if any of the following conditions exist:

- The operating system version is incorrect.
- A prerequisite software version is incorrect.
- Quotas necessary for successful installation are insufficient.
- System parameter values for successful installation are insufficient.
- The VMS help library is currently in use.

For descriptions of the error messages generated by these conditions, see the VMS documentation on system messages, recovery procedures, and VMS software installation. If you are notified that any of these conditions exist, you should take appropriate action as described in the message. (You might need to change a system parameter or increase an authorized quota value.) For information on installation requirements, see Chapter 1.

3
After Installing DECtrace

After installing DECtrace, you need to perform the following tasks:

- Insert registered facility definitions into the DECtrace administration database.
- Edit the system startup and shutdown files.
- Set user account quotas.
- Modify system parameter settings.

For cluster installations, you must:

- Activate the software license on each node that will be running DECtrace.
- Reinstall (using the VMS INSTALL utility) the image SYS$SHARE:DCLTABLES.EXE on each node that will be running DECtrace Version 1.1.
- Execute the SYS$STARTUP:EPC$STARTUP.COM startup file on each node that will be running DECtrace. Note that this is executed automatically as part of the IVP on the node you used for the installation.

This chapter also explains how to run the Installation Verification Procedure (IVP) independently after the software is installed.

3.1 Inserting Registered Facility Definitions

After you install DECtrace on your system or VAXcluster, you need to insert into the DECtrace administration database the facility definitions for those layered products and applications that support DECtrace.

To insert the facility definitions, execute the following command procedure:

```
$ @EPC$EXAMPLES:EPC$INSERT.COM
```

Existing facilities on your system may have already inserted their facility definitions into the DECtrace facility library, located in: SYS$LIBRARY:EPC$FACILITY.TLB. The EPC$INSERT procedure checks for the existence of that library and asks you if you want to move the facility definitions into the DECtrace administration database. Any facility definitions which have events defined as both point and duration (see the *DECtrace for VMS Release Notes*) will not be moved into the Version 1.1 administration database.

Subsequent versions of the layered products will automatically insert their facility definitions into the DECtrace administration database as part of their installation procedures. You only need to execute EPC$INSERT.COM when you are installing DECtrace for the first time.

3.2 Editing the System Files

You must edit the system startup and shutdown files to provide for automatic startup and shutdown of DECtrace when your system is rebooted.

Add the command line that starts DECtrace to the system startup file SYS$MANAGER:SYSTARTUP_V5.COM. You must position this new command line *after* the line that activates the Rdb/VMS monitor process.

```
$! Start the Rdb/VMS monitor process
$ @SYS$STARTUP:RMONSTART.COM
$! Start DECtrace
$ @SYS$STARTUP:EPC$STARTUP.COM
```

Add the DECtrace shutdown procedure to the system shutdown file SYS$MANAGER:SYSHUTDWN.COM. You must position this new command line *before* the line that stops the Rdb/VMS monitor process.

```
$! Shutdown DECtrace and abort all active data collection
$ COLLECT STOP SYSTEM /ABORT
$! Shutdown the Rdb/VMS monitor process
$ @SYS$MANAGER:RMONSTOP.COM
```

3.3 Modifying System Parameters

The installation for DECtrace requires that you raise the values of the CLISYMTBL and CTLPAGES system parameters. Once the installation is complete, lower these values to ensure efficient system performance. Table 1–3 contains the values for the parameters under normal operations.

If you typically format very large data collection files, you may need to increase the enqueue limit quota (ENQLM) on your process. If you do this, you must also raise the corresponding system parameters. If you increase your ENQLM, the lock ID table (LOCKIDTBL_MAX) must be set to a value at least as high as the ENQLM. Also, the resource hash table (RESHASHTBL) should be set to at least one-quarter the value of the lock ID table.

3.4 VAXcluster Considerations

If you are installing DECtrace on a VAXcluster, you must activate your software license on each node for which you want data collection enabled. Issue the following command on each node where you want to activate the DECtrace full-development license:

```
$  LICENSE LOAD DECTRACE
```

Or, for the DECtrace run-time license:

```
$  LICENSE LOAD DECTRACE-RUNTIME
```

Then, start the DECtrace Registrar process on each node for which you want data collection enabled. Issue the following command on each node:

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

You may need to use the VMS Install utility to replace the DCLTABLES.EXE image on each node:

```
$  INSTALL
INSTALL>  REPLACE SYS$SHARE:DCLTABLES.EXE/OPEN/HEADER/SHARE
```

Note that you must log out and back in again for the new DCL tables to take effect. If you do not, your process will not recognize the COLLECT command.

3.4.1 Dividing a VAXcluster

If you have DECtrace installed on a VAXcluster and then decide to reorganize the cluster into two or more clusters, you can preserve the facility definitions and selections stored in your administration database. Perform the following steps:

1. Extract EPC$EXT_ADMIN_DB.DB_EXE and EPC$INS_ADMIN_DB.DB_ EXE from the EPC011.A saveset.
2. Shut down the Registrar processes on each node in the cluster by entering the COLLECT STOP SYSTEM /ABORT command on each system.
3. Run the EPC$EXT_ADMIN_DB.DB_EXE image on the original cluster. One EPC$DEF binary file and seven TXT flat files will be placed in the EPC$DATABASE_DIR directory.

4. Divide the cluster.
5. Reinstall DECtrace on the original and new clusters.
6. Shut down the Registrars on the nodes used to install DECtrace.
7. Run the EPC$INS_ADMIN_DB.DB_EXE image on the original cluster.
8. Copy the EPC$DEF and TXT files to the EPC$DATABASE_DIR directory on the new clusters.
9. Run the EPC$INS_ADMIN_DB.DB_EXE image on the new clusters.
10. Delete the EPC$DEF and TXT files.
11. Restart the Registrars on all nodes (@SYS$UPDATE:EPC$STARTUP).

Note

You cannot simply backup the original database and then restore it on the new cluster. The Registrar would attempt to start collections on nodes that are no longer part of the original VAXcluster.

3.5 User Account Requirements

To work with DECtrace, user accounts on your system must have certain privileges and quotas. The next two sections contain information on these requirements. The third section discusses how to set up user accounts.

3.5.1 Privileges

To use DECtrace, each account must have at least the TMPMBX and NETMBX privileges. Use the VMS Authorize Utility to determine whether users have the privileges they require.

3.5.2 User Account Quotas

You must make sure that the appropriate user accounts have sufficient quotas to be able to use DECtrace. If you typically format very large collection files (over 50,000 blocks) and generate reports based on large formatted databases, you can improve performance by increasing several of your account quotas. Table 3–1 summarizes the required and optional user account quotas.

Table 3–1 User Account Quotas for Using DECtrace

Account Quota	Normal Use	Formatting and Reporting on Large Files
ASTLM	24	
BIOLM	20	
BYTLM	20,480	34,810
DIOLM	20	
ENQLM	1,800	10,000
FILLM	50	
PGFLQUO	20,000	75,000
PRCLM	1	
WSEXTENT	2048	
WSQUOTA	1024	

User account quotas are stored in the file SYSUAF.DAT. Use the VMS Authorize Utility to verify and change user account quotas. First set your directory to SYS$SYSTEM and then run AUTHORIZE:

```
$  SET DEFAULT SYS$SYSTEM
$  RUN AUTHORIZE
UAF>
```

At the UAF> prompt, use the SHOW command with an account name to check a particular account. For example:

```
UAF>  SHOW SMITH
```

To change a quota, use the MODIFY command at the UAF> prompt. MODIFY has the following format:

MODIFY account-name /quota-name=NNN

The following example changes the FILLM quota for the SMITH account and then exits from the utility:

```
UAF>  MODIFY SMITH /FILLM=50
UAF>  EXIT
```

After you exit from the utility, the system displays messages indicating whether or not changes were made. Once you have made the changes, the users must log out and log in again for the new quotas to take effect.

For more information on modifying account quotas, see the *VMS Authorize Utility Manual*.

3.6 Testing DECtrace

If you did not choose to run the IVP as part of the installation procedure, you can run it interactively with the following command:

```
$  @SYS$TEST:EPC$IVP
```

Digital recommends that you run the IVP on every node where you intend to use the DECtrace software. This is useful if you install the DECtrace full-development license on some nodes, and the run-time license on the remaining nodes in a VAXcluster. The IVP will not test the formatting or reporting functionality on nodes where only the run-time license is installed.

3.7 Enhancing DECtrace Performance

After you install DECtrace, you might want to adjust your system to enhance performance or lower the use of some system resources. One recommendation is to increase process working set parameters which will speed up DECtrace formatting operations and report generations.

After you perform a number of collections on your system, you may wish to create a new version of the history database and purge (or offload) the old one. If you don't want to have to be reminded of this, you could put the DECtrace SET HISTORY/NEW_FILE command into your site-specific startup procedure. This command closes the old database and creates a new one. If you choose to do this, you should put the command before the execution of EPC$STARTUP so that no history data is lost. For example:

```
$ COLLECT SET HISTORY/NEW_FILE
$ PURGE/NOLOG/NOCONFIRM/KEEP=2 EPC$HISTORY_DB
$ @SYS$STARTUP:EPC$STARTUP
```

See the System Management chapter in the *DECtrace for VMS User's Guide* for more information on managing DECtrace usage.

3.8 Deinstalling DECtrace

A deinstallation procedure is provided in SYS$UPDATE.

```
$  @SYS$UPDATE:EPC$DEINSTAL.COM
```

See Appendix B for a log of the deinstallation procedure.

Prior to removing DECtrace from your system, you may wish to move the facility definitions stored in the current administration database into the DECtrace facility library (EPC$FACILITY.TLB) located in SYS$SHARE. This text library is referenced during reinstallations of DECtrace so that you do not have to reinsert the definitions for Digital layered products or for your own applications.

To list the facility definitions that are already stored in the facility library (and therefore do not need to be moved), issue the following command:

```
$  LIBRARY /LIST /FULL SYS$SHARE:EPC$FACILITY.TLB
```

To list the facility definitions that are stored in the DECtrace administration database, issue the following command:

```
$  COLLECT SHOW DEFINITION /FORMAT=NAMES_ONLY
```

Use the EXTRACT DEFINITION command to extract a facility definition from the DECtrace administration database. Then use the INSERT DEFINITION /LIBRARY command to insert the definition into the facility library. For example:

```
$  COLLECT EXTRACT DEFINITION ATM-SAMPLE  ATM_FAC_DEF.EPC$DEF -
_$  /VERSION="V1.0"
$  COLLECT INSERT DEFINITION ATM_FAC_DEF.EPC$DEF -
_$  /LIBRARY /REPLACE
```

Note

If you are extracting definitions from a DECtrace Version 1.0 or Version 1.0A administration database, you will be unable to reinsert into DECtrace Version 1.1 any definitions which have events that are both point and duration. See the *DECtrace for VMS Release Notes* for more information.

A
Sample Installation

This appendix contains a sample installation of DECtrace. This sample was run on a system that did not have a previous version of DECtrace installed.

The installation procedure is the same regardless of whether you install the DECtrace run-time or full-development license. Only the Installation Verification Procedure (IVP) is different. For systems with the run-time license, the IVP does not test the DECtrace formatting or reporting functionality. The IVP runs at the end of the installation.

```
$  @SYS$UPDATE:VMSINSTAL EPC011 DUA1:[DECTRACE] OPTIONS N

   VAX/VMS Software Product Installation Procedure V5.2

It is 31-JAN-1991 at 17:09.

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

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

The following products will be processed:

  EPC V1.1

       Beginning installation of EPC V1.1 at 17:09

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

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

    Additional Release Notes Options:

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

* Select option [2]:  2

* Do you want to continue the installation [NO]?  YES
%VMSINSTAL-I-RELMOVED , The product's release notes have been
successfully moved to SYS$HELP.
```

```
        Installation procedures for: "DECtrace V1.1-0"

        Product:      DECTRACE
        Producer:     DEC
        Version:      1.1
        Release Date: 25-APR-1991

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

    Be sure you have read the section entitled

        "Preparing Your System and the Installing Account"

    in the installation guide before continuing with the installation.

    Checking system requirements ...

* Specify device specification for EPC$ROOT [SYS$SYSDEVICE:]:  SYS$SYSDEVICE:
%EPC-I-LIBRARY, The logical name EPC$ROOT is defined as SYS$SYSDEVICE:[EPC.]

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

    SYSTEM MANAGER:

    By adding PUBLIC access to the DECtrace databases you are
    allowing all users on your system access to DECtrace.  If you
    want to allow only certain users to access DECtrace, enter No
    at the prompts and add the users directly via the DECtrace
    SET ACCESS command after the installation.

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

* Do you want to add public write access to the ADMINISTRATION
  database [YES]?  YES
* Do you want to add public write access to the HISTORY
  database [YES]?  YES

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

    This installation requires the creation of the EPC$SERVER
    account.  You MUST choose a UIC and password for this
    account.

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

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

    The installation procedure will not proceed until you enter a
    valid user identification code (UIC) for the EPC$SERVER
    account.

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

* Enter UIC to be used for EPC$SERVER account (e.g. [376,750]):  [376,750]

    ****************************************************************
```

```
    The entire installation will FAIL if you do not enter a valid
    password for the EPC$SERVER account.  You will be given
    3 chances to verify your password.  This installation
    procedure requires at least 15 characters for the
    EPC$SERVER password.  Valid characters for a password are:

       A through Z
       a through z
       0 through 9
       $ (dollar sign)
       _ (underscore)

    As with the DCL SET PASSWORD command, your input will not
    appear on the terminal.  And to protect against typing errors
    that are not seen when entering the password, you must enter
    the password twice.

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


* Please enter PASSWORD to be used for EPC$SERVER account:  ABCDEFGHIJKLMNOP

* Please verify the PASSWORD entered for EPC$SERVER :  ABCDEFGHIJKLMNOP

%VMSINSTAL-I-ACCOUNT, This installation updates an ACCOUNT named EPC$SERVER.
%UAF-I-ADDMSG, user record successfully added
%UAF-I-RDBADDMSGU, identifier EPC$SERVER value [376,750] added to rights
  data base

%VMSINSTAL-I-SYSDIR, This product creates system disk directory
  SYS$SYSDEVICE:[EPC.][HOMEDIR].
%VMSINSTAL-I-SYSDIR, This product creates system disk directory
  SYS$SYSDEVICE:[EPC.][DATABASES].
%VMSINSTAL-I-SYSDIR, This product creates system disk directory
  VMI$ROOT:[SYSTEST.EPC].
%VMSINSTAL-I-SYSDIR, This product creates system disk directory
  VMI$ROOT:[SYSHLP.EXAMPLES.EPC].

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

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

    Beginning installation ...

    If this is an upgrade an attempt will be made to convert the existing
    DECtrace databases.  If no errors are encountered, there will be no
    more questions.

    Installing under VMS V5.2     -

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

Creating the Administration database...
```

```
Creating the History database...

    There are no more questions.  The remainder of the installation
    takes approximately 15 minutes on a stand-alone VAX-11/780.


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

    SYSTEM MANAGER:

    The following command line MUST be added to the system startup
    command file SYS$MANAGER:SYSTARTUP_V5.COM for all nodes that will
    be running DECtrace.
    NOTE: Add this command line after starting Rdb/VMS

        $ @SYS$STARTUP:EPC$STARTUP.COM

    The following command line MUST be added to the system shutdown
    command file SYS$MANAGER:SYSHUTDWN.COM for all nodes that will
    be running DECtrace.
    NOTE: Add this command line before shutting down the Rdb/VMS
    monitor.

        $ COLLECT STOP SYSTEM/ABORT

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


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

    All applications instrumented with DECtrace need to be
    restarted in order to be able to be part of an active
    collection.

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

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

    The DECtrace Installation Verification Procedure (IVP) has
    been provided in SYS$TEST

    It is invoked using the command:

        $ @SYS$TEST:EPC$IVP.COM

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


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

    A DECtrace Post Installation Procedure has been provided
    in EPC$EXAMPLES.  The purpose of this procedure is to
    insert Rdb/VMS V3.1B, Rdb/VMS V4.0, DBMS V4.1 and
    DBMS V4.2 into the DECtrace administration database on
    your system.

    It is invoked using the command:

        $ @EPC$EXAMPLES:EPC$INSERT.COM
```

```
    ************************************************************

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

    The DECtrace sample ATM application has been provided
    in EPC$EXAMPLES.

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


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

        The release notes for DECtrace are available in the file
        SYS$HELP:EPC011.RELEASE_NOTES

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

%VMSINSTAL-I-MOVEFILES, Files will now be moved to their target directories...
%RUN-S-PROC_ID, identification of created process is 0000010B

$
$
*******************************************************************************
*                                                                             *
*              Executing the DECtrace V1.1-0 IVP ...
*                                                                             *
*******************************************************************************
$
$
Displaying DECtrace HELP from DCL...

DECTRACE

     DECtrace for VMS is a VMS layered product that collects and reports on
     event-based data gathered from any combination of VMS layered products
     and application programs containing DECtrace service routine calls.
     DECtrace operates with minimal performance impact on the system and
     thus can be used in both production and development environments.

     Additional HELP is provided within the DECtrace command environment
     and can be viewed with the command:

     $ COLLECT HELP

  Additional information available:

  Interface  Release_notes         Error_messages        Sample_application
  Logical_names         IVP

Displaying HELP using the DECtrace HELP command...

  Information available:

  @(Execute_Procedure)  CANCEL_COLLECTION     Command_Syntax        CREATE
  DELETE     Error_Messages_and_Recovery      EXIT       EXTRACT_DEFINITION
  FORMAT     HELP       INSERT_DEFINITION     REPORT     SCHEDULE_COLLECTION
  Service_Routines      SET        SHOW       SPAWN      STOP_SYSTEM
```

```
Creating a facility definition...

%EPC-S-FACCRE, Facility definition EPC$IVP_FAC V1.0 was created


Showing the facility definition...

31-JAN-1991 17:23       Facility Definition Information                Page 1
Full Report                                                  DECtrace V1.1-0

Facility:      EPC$IVP_FAC
Number:        750
Version:       V1.0        DEFAULT
Creation Date: 31-JAN-1991 17:23
Created By:    SYSTEM

Events:

  Event Name       Event ID  Report Header
  ---------------  --------  ----------------
  FIRST_EVENT      1         FIRST_EVENT
  SECOND_EVENT     2         SECOND_EVENT

Items:

 Item Name      Item  Datatype  Max.   Usage    Item Report   Report  Char Rad
                  ID           Size   Type     Header        Width
 -------------  ----  --------  -----  -------  ------------  ------  ---- ---
 BIO             101  LONGWORD      4  COUNTER  BUFFERED IO     11    PRT  DEC
 DIO             102  LONGWORD      4  COUNTER  DIRECT IO       11    PRT  DEC
 PAGEFAULTS      103  LONGWORD      4  COUNTER  PAGEFAULTS      11    PRT  DEC
 PAGEFAULT_IO    104  LONGWORD      4  COUNTER  PAGEFAULT        11    PRT  DEC
                                                IOs
 CPU             105  LONGWORD      4  COUNTER  CPU TIME        11    PRT  DEC
 CURRENT_PRIO    106  WORD          2  LEVEL    CURRENT PRIO    6     PRT  DEC
 VIRTUAL_SIZE    107  LONGWORD      4  LEVEL    VIRTUAL SIZE    11    PRT  DEC
 WS_SIZE         108  LONGWORD      4  LEVEL    WORKING SET     11    PRT  DEC
                                                SIZ
 WS_PRIVATE      109  LONGWORD      4  LEVEL    PRIVATE WS      11    PRT  DEC
 WS_GLOBAL       110  LONGWORD      4  LEVEL    GLOBAL WS       11    PRT  DEC

Item Groups:

  Item Group Name:  RESOURCE_ITEMS
```

```
  Item Name
  -----------------
  BIO
  DIO
  PAGEFAULTS
  PAGEFAULT_IO
  CPU
  CURRENT_PRIO
  VIRTUAL_SIZE
  WS_SIZE
  WS_PRIVATE
  WS_GLOBAL

  Class:  ALL                              DEFAULT


Event Name:    FIRST_EVENT

 Record Type       Item Name        Position
 ----------------  ---------------  --------
 START EVENT       BIO                 x
                   DIO                 x
                   PAGEFAULTS          x


31-JAN-1991 17:23       Facility Definition Information                Page 2
Full Report                                                  DECtrace V1.1-0

 Record Type       Item Name        Position
 ----------------  ---------------  --------
                   PAGEFAULT_IO        x
                   CPU                 x
                   CURRENT_PRIO        x
                   VIRTUAL_SIZE        x
                   WS_SIZE             x
                   WS_PRIVATE          x
                   WS_GLOBAL           x

 END EVENT         BIO                 x
                   DIO                 x
                   PAGEFAULTS          x
                   PAGEFAULT_IO        x
                   CPU                 x
                   CURRENT_PRIO        x
                   VIRTUAL_SIZE        x
                   WS_SIZE             x
                   WS_PRIVATE          x
                   WS_GLOBAL           x

Event Name:    SECOND_EVENT
```

```
 Record Type       Item Name        Position
 ----------------  ---------------  --------
 START EVENT       BIO                 x
                   DIO                 x
                   PAGEFAULTS          x
                   PAGEFAULT_IO        x
                   CPU                 x
                   CURRENT_PRIO        x
                   VIRTUAL_SIZE        x
                   WS_SIZE             x
                   WS_PRIVATE          x
                   WS_GLOBAL           x

 END EVENT         BIO                 x
                   DIO                 x
                   PAGEFAULTS          x
                   PAGEFAULT_IO        x
                   CPU                 x
                   CURRENT_PRIO        x
                   VIRTUAL_SIZE        x
                   WS_SIZE             x
                   WS_PRIVATE          x
                   WS_GLOBAL           x

Creating the facility selection...

%EPC-S-SELCRE, Selection EPC$IVP_SELECTION was created


Schedule a collection...

%EPC-S-SCHED, Data collection EPC$IVP_COLLECTION is scheduled


Showing the EPC$IVP_COLLECTION collection was scheduled...

31-JAN-1991 17:24            Scheduled Collections                    Page 1
Brief Report                                                 DECtrace V1.1-0

Collections scheduled for node RETOOL

    Collection Name   Selection Name   Start              End
    ----------------  ---------------  -----------------  -----------------
->  EPC$IVP           EPC$IVP          31-JAN-1991 17:24  31-JAN-1991 17:34
    _COLLECTION       _SELECTION


Running the IVP test program...

Cancelling data collection...

%EPC-S-SCHED_ABTNG, Data collection EPC$IVP_COLLECTION has been set
     to aborting
```

```
Showing the EPC$IVP_COLLECTION collection was cancelled...

31-JAN-1991 17:26            Scheduled Collections                    Page 1
Brief Report                                                 DECtrace V1.1-0

%EPC-I-SCHED_NOMSGFND, No Collections Found


Showing any errors that may have occurred during collection...

31-JAN-1991 17:27           Data Collection History                   Page 1
DECtrace error history for cluster                           DECtrace V1.1-0

For database:  EPC$HISTORY_DB

%EPC-I-HST_NOMSGFND, No History Messages Found


Delete the facility selection...

%EPC-S-SELDEL_DELETED, Selection EPC$IVP_SELECTION was deleted


Delete the facility definition...

%EPC-S-FACDEL_DELETED, Facility definition EPC$IVP_FAC V1.0 was deleted


Showing that the data collection file was created...

Directory SYS$COMMON:[SYSTEST.EPC]

EPC$DCF.DAT;1           320  31-JAN-1991 17:24:15.64

Total of 1 file, 320 blocks.

Formatting the data collection file...

%EPC-I-FMT_RDB_CREATE, Creating database EPC$IVP_DIR:EPC$IVP_DB
%EPC-S-FMT_RDB_SUCCESS, Successfully created database
%EPC-I-FMT_DCF_BEGIN, Formatting data file EPC$IVP_DIR:EPC$DCF.DAT
%EPC-S-FMT_DCF_SUCCESS, Successfully formatted data file
     EPC$IVP_DIR:EPC$DCF.DAT
%EPC-S-FMT_SUCCESS, Formatting successfully completed


Generating a Detail Report to epc$ivp_dir:epc$ivp_detail.txt...

%EPC-S-RPCL_SUCCESS, Report successfully completed


Generating a Frequency Report...

31-JAN-1991 17:29     DECtrace V1.1-0 IVP Frequency Report        Page 1
Selection: EPC$IVP_SELECTION                                 DECtrace V1.1-0

Event:  FIRST_EVENT     In Facility:  EPC$IVP_FAC     Version:  V1.0
```

```
Time Period          Occurrences

31-JAN-1991 17:25:00          50


31-JAN-1991 17:29     DECtrace V1.1-0 IVP Frequency Report             Page 2
Selection: EPC$IVP_SELECTION                                  DECtrace V1.1-0

Event:  SECOND_EVENT    In Facility:  EPC$IVP_FAC     Version:  V1.0

Time Period          Occurrences

31-JAN-1991 17:25:00          50


31-JAN-1991 17:29                    Index                         Page 3
Selection: EPC$IVP_SELECTION                                  DECtrace V1.1-0

Report Index

Facility Name                Event Name                       Page

EPC$IVP_FAC                  FIRST_EVENT                      1
EPC$IVP_FAC                  SECOND_EVENT                     2
%EPC-S-RPCL_SUCCESS, Report successfully completed

******** End of Frequency Report ********


Generating a Summary Report...

31-JAN-1991 17:30      DECtrace V1.1-0 IVP Summary Report             Page 1
Selection: EPC$IVP_SELECTION                                  DECtrace V1.1-0

Event:  FIRST_EVENT     In Facility:  EPC$IVP_FAC     Version:  V1.0

           Elapsed  BUFFERED IO     CPU TIME  CURREN    DIRECT IO   PAGEFAULTS
                                              T PRIO

Minimum       0.50            0            0       6            0            0
Maximum       0.50            0            0       6            0            2
Mean          0.50         0.00         0.00    6.00         0.00         0.04
Std Dev       0.00         0.00         0.00    0.00         0.00         0.28
95 Prct       0.50         0.00         0.00    6.00         0.00         0.59
Total        25.00            0            0     300            0            2
Count           50
```

	PAGEFAULT IOs	VIRTUAL SIZE	GLOBAL WS	PRIVATE WS	WORKING SET SIZ
Minimum	0	2897	84	528	706
Maximum	0	2897	84	528	706
Mean	0.00	2897.00	84.00	528.00	706.00
Std Dev	0.00	0.00	0.00	0.00	0.00
95 Prct	0.00	2897.00	84.00	528.00	706.00
Total	0	144850	4200	26400	35300
Count	50				

%EPC-I-RPQU_BAD_95, 95 Prct for events with counts under 1000 are less precise

Event: SECOND_EVENT In Facility: EPC$IVP_FAC Version: V1.0

	Elapsed	BUFFERED IO	CPU TIME	CURRENT PRIO	DIRECT IO	PAGEFAULTS
Minimum	0.50	0	0	6	0	0
Maximum	0.50	0	0	6	0	0
Mean	0.50	0.00	0.00	6.00	0.00	0.00
Std Dev	0.00	0.00	0.00	0.00	0.00	0.00
95 Prct	0.50	0.00	0.00	6.00	0.00	0.00
Total	25.00	0	0	300	0	0
Count	50					

	PAGEFAULT IOs	VIRTUAL SIZE	GLOBAL WS	PRIVATE WS	WORKING SET SIZ
Minimum	0	2897	84	528	706
Maximum	0	2897	84	528	706
Mean	0.00	2897.00	84.00	528.00	706.00
Std Dev	0.00	0.00	0.00	0.00	0.00
95 Prct	0.00	2897.00	84.00	528.00	706.00
Total	0	144850	4200	26400	35300
Count	50				

%EPC-I-RPQU_BAD_95, 95 Prct for events with counts under 1000 are less precise

```
31-JAN-1991 17:30                    Index                              Page 3
Selection: EPC$IVP_SELECTION                                  DECtrace V1.1-0

Report Index

Facility Name                Event Name                        Page

EPC$IVP_FAC                  FIRST_EVENT                       1
EPC$IVP_FAC                  SECOND_EVENT                      2
%EPC-S-RPCL_SUCCESS, Report successfully completed

******** End of Summary Report ********


Deleting the data collection file and formatted database...
%DELETE-I-FILDEL, SYS$COMMON:[SYSTEST.EPC]EPC$DCF.DAT;1 deleted (321 blocks)
%DELETE-I-FILDEL, SYS$COMMON:[SYSTEST.EPC]EPC$IVP_DB.RDB;1 deleted (5094 blocks)
%DELETE-I-FILDEL, SYS$COMMON:[SYSTEST.EPC]EPC$IVP_DB.SNP;1 deleted (3 blocks)
%DELETE-I-TOTAL, 3 files deleted (5418 blocks)

*******************************************************************************
*                                                                             *
*               DECtrace V1.1-0 IVP Completed Successfully
*                                                                             *
*******************************************************************************
        Installation of EPC V1.1 completed at 17:30

        VMSINSTAL procedure done at 17:30


$  @EPC$EXAMPLES:EPC$INSERT.COM
*******************************************************************************
*                                                                             *
*   EPC$INSERT.COM - Inserts ACMS V3.1, DBMS V4.1, DBMS V4.2, Rdb/VMS V3.1A, *
*                    Rdb/VMS V3.1B and Rdb/VMS V4.0 facility definitions     *
*                    into SYS$SHARE:EPC$FACILITY.TLB.  It also allows the    *
*                    user to insert these and other facility definitions,    *
*                    located in SYS$SHARE:EPC$FACILITY.TLB, into the         *
*                    DECtrace admininstration database.                      *
*                                                                             *
*******************************************************************************


   Deleting all global symbols...

   Inserting the ACMS V3.1 facility definition into EPC$FACILITY.TLB

   Inserting the DBMS V4.1 facility definition into EPC$FACILITY.TLB

   Inserting the DBMS V4.2 facility definition into EPC$FACILITY.TLB

   Inserting the Rdb/VMS V3.1 facility definition into EPC$FACILITY.TLB

   Inserting the Rdb/VMS V4.0 facility definition into EPC$FACILITY.TLB
```

```
   The following facility definitions have been found in
   SYS$SHARE:EPC$FACILITY.TLB:

            ACMSV3.1-0
            DBMSV4.1-419
            DBMSV4.2-426
            OAV2.4
            RDBVMSV3.1-0
            RDBVMSV4.0-0

   Would you like to insert these facilities into DECtrace [YES]?  YES

   Inserting the ACMSV3.1-0 facility definition...

%EPC-S-FACINS, Facility definition(s) was successfully inserted

   Inserting the DBMSV4.1-419 facility definition...

%EPC-S-FACINS, Facility definition(s) was successfully inserted

   Inserting the DBMSV4.2-426 facility definition...

%EPC-S-FACINS, Facility definition(s) was successfully inserted

   Inserting the OAV2.4 facility definition...

%EPC-S-FACINS, Facility definition(s) was successfully inserted

   Inserting the RDBVMSV3.1-0 facility definition...

%EPC-S-FACINS, Facility definition(s) was successfully inserted

   Inserting the RDBVMSV4.0-0 facility definition...

%EPC-S-FACINS, Facility definition(s) was successfully inserted


31-JAN-1991 17:37       Facility Definition Information               Page 1
Names Only Report                                              DECtrace V1.1-0

 Facility:            Version:    Creation Date:      Class:
 -------------------  ----------  ------------------  ------------------
 ACMS                 V3.1-0       3-APR-1990 14:31   ALL
                                                      PERFORMANCE       (D)

 DBMS                 V4.1-419    10-AUG-1990 16:26   ALL
                                                      PERFORMANCE       (D)
                                                      RDBEXPERT
                      V4.2-426    10-AUG-1990 16:07   ALL
                                                      PERFORMANCE       (D)
                                                      RDBEXPERT

 OA                   V2.4         3-APR-1990 14:32   ALL
                                                      CAPACITY_PLANNING (D)
                                                      PERFORMANCE
```

```
 RDBVMS                V4.0-0      26-DEC-1990 15:45   ALL
                                                       PERFORMANCE       (D)
                                                       RDBEXPERT
                       V3.1-0      10-AUG-1990 16:14   ALL
                                                       PERFORMANCE       (D)
                                                       RDBEXPERT

******************************************************************************
*                                                                            *
*               All facility definitions were inserted successfully          *
*                                                                            *
******************************************************************************

$  LOGOUT
  SYSTEM       logged out at 31-JAN-1991 17:47:43.24
```

B
Sample Deinstallation

This appendix contains a sample deinstallation of the DECtrace software.

```
$  @SYS$UPDATE:EPC$DEINSTAL.COM

All process global symbols being deleted...

        This procedure removes the DECtrace for VMS product from
        the system(s) on which you execute this procedure.  This
        procedure will also delete the DECtrace files in EPC$ROOT,
        EPC$HOME_DIR, EPC$DATABASE_DIR, and EPC$EXAMPLES.  All EPC$
        system logical names will also be deassigned.  Note that this
        procedure will delete all the files and subdirectories under
        EPC$ROOT that are related to DECtrace, if the following conditions
        are met:

             1)  There are no files other than files that
                 pertain to DECtrace in EPC$DATABASE_DIR

             2)  There are no files other than files that
                 pertain to DECtrace in EPC$HOME_DIR

             3)  There are no files other than files that
                 pertain to DECtrace in EPC$ROOT

        Otherwise, the EPC$ROOT and subdirectories will NOT be deleted.

        To deinstall DECtrace for VMS from other nodes in the cluster,
        log into a privileged account on all the other nodes
        in the cluster, and use the command:

             $ @SYS$UPDATE:EPC$DEINSTAL CONTINUED

        This will stop the EPC$REGISTRAR process, remove the EPC$SERVER
        account and remove the DECtrace entries/verbs from the HELP/DCL
        tables.


           SPECIAL NOTES FOR VAXCLUSTERS WITH MULTIPLE SYSTEM DISKS.

        You must run the full deinstallation procedure on:
```

```
            o    Each system in the cluster that has its own
                 system disk, and

            o    In the case of a shared system disk, on one
                 node in the set that shares that system disk.

        Also, you must run the deinstallation procedure with the CONTINUED
        parameter on all the machines in your cluster on which you did not
        run the full deinstallation procedure.

Continue processing [Y]:  Y


        Stopping the local EPC$REGISTRAR process...

%UAF-I-REMMSG, record removed from system authorization file
%UAF-I-RDBREMMSGU, identifier EPC$SERVER value: [000376,000750] removed
from rights data base

        Deleting the following files:

           SYS$SYSROOT:[SYS$STARTUP]
                EPC$STARTUP.COM

           SYS$SYSROOT:[SYSHLP]
                EPC011.RELEASE_NOTES
                EPC$CLI_HELP.HLB
                EPC$MSG.DOC

           SYS$SYSROOT:[SYSLIB]
                EPC$DEFINITIONS.ADA
                EPC$DEFINITIONS.BAS
                EPC$DEFINITIONS.FOR
                EPC$DEFINITIONS.H
                EPC$DEFINITIONS.LIB
                EPC$DEFINITIONS.MAR
                EPC$DEFINITIONS.PAS
                EPC$DEFINITIONS.PLI
                EPC$DEFINITIONS.R32
                EPC$FUNCSHR.EXE
                EPC$FUNCSHRP.EXE
                EPC$LSE_ENVIRONMENT.LSE

           SYS$SYSROOT:[SYSMSG]
                EPC$MSG.EXE

           SYS$SYSROOT:[SYSEXE]
                EPC$MAIN.EXE
                EPC$REGISTRAR.EXE

           SYS$SYSROOT:[SYSUPD]
                EPC$VMSINSTAL_CALLBACK.COM
```

```
EPC$EXAMPLES:
     EPC$INSERT.COM
     ACMSV31_FAC_DEF.EPC$DEF
     DBMSV41_FAC_DEF.EPC$DEF
     DBMSV42_FAC_DEF.EPC$DEF
     RDBV31_FAC_DEF.EPC$DEF
     RDBV31AB_FAC_DEF.EPC$DEF
     RDBV40_FAC_DEF.EPC$DEF
     ALLIN1V24_FAC_DEF.EPC$DEF
     EPC$ATM-SAMPLE.EXE
     EPC$ATM-SAMPLE.C
     EPC$ATM-SAMPLE.COB
     EPC$ATM-SAMPLE.FOR
     EPC$ATM-SAMPLE.PAS
     EPC$ATM-SAMPLE.DAT
     EPC$ATM-PASCAL.DAT
     EPC$ATM-FAC-DEF.COM
     EPC$ATM-SAMPLE-EXTENDED.C
     EPC$ATM-FAC-DEF-EXTENDED.COM

SYS$SYSROOT:[SYSTEST]
     EPC$IVP.COM
     EPC.DIR

SYS$SYSROOT:[SYSTEST.EPC]
     EPC$IVP.EXE
     EPC$DCF.DAT
     EPC$IVP_DB.RDB
     EPC$IVP_DB.SNP
     EPC$IVP_DETAIL.TXT

EPC$DATABASE_DIR:
     EPC$ADMIN_DB.RDB
     EPC$ADMIN_DB_AREA_01.RDA
     EPC$ADMIN_DB_AREA_01.SNP
     EPC$ADMIN_DB_AREA_02.RDA
     EPC$ADMIN_DB_AREA_02.SNP
     EPC$ADMIN_DB_AREA_05.RDA
     EPC$ADMIN_DB_AREA_05.SNP
     EPC$ADMIN_DB_AREA_06.RDA
     EPC$ADMIN_DB_AREA_06.SNP
     EPC$ADMIN_DB_AREA_SYS.RDA
     EPC$ADMIN_DB_AREA_SYS.SNP
     EPC$HISTORY_DB.RDB
     EPC$HISTORY_DB.SNP

EPC$HOME_DIR:
     EPC$REGISTRAR_INIT.LOG
     EPC$REGISTRAR*.LOG   (EPC$REGISTRAR log)
     *_EPC$REGISTRAR*.LOG (Old EPC$REGISTRAR logs)
     EPC$BUGCHECK.DMP (Bugcheck dump files)
```

```
        EPC$ROOT and its subdirectories have been deleted.

        All DECtrace logical names have been deleted from the system logical
        name table.  Please remove the command to startup DECtrace from the
        SYSTARTUP_V5.COM procedure in SYS$MANAGER, namely:

                $ @SYS$STARTUP:EPC$STARTUP.COM

        Replaced SYS$LIBRARY:DCLTABLES.EXE with new version.

DECtrace for VMS deinstallation completed at 29-JAN-1991 17:16:10.29
on node MYVAX1.

$  LOGOUT
  SYSTEM       logged out at  29-JAN-1991 17:18:25.40
```

C
DECtrace Files

During the installation, DECtrace creates the following files on your system:

SYS$SYSROOT:[SYS$STARTUP]

- EPC$STARTUP.COM

SYS$SYSROOT:[SYSHLP]

- EPC011.RELEASE_NOTES
- EPC$CLI_HELP.HLB
- EPC$MSG.DOC

SYS$SYSROOT:[SYSLIB]

- EPC$DEFINITIONS.ADA
- EPC$DEFINITIONS.BAS
- EPC$DEFINITIONS.FOR
- EPC$DEFINITIONS.H
- EPC$DEFINITIONS.LIB
- EPC$DEFINITIONS.MAR
- EPC$DEFINITIONS.PAS
- EPC$DEFINITIONS.PLI
- EPC$DEFINITIONS.R32
- EPC$FUNCSHR.EXE
- EPC$FUNCSHRP.EXE
- EPC$LSE_ENVIRONMENT.ENV

SYS$SYSROOT:[SYSMSG]

- EPC$MSG.EXE

SYS$SYSROOT:[SYSEXE]

- EPC$MAIN.EXE
- EPC$REGISTRAR.EXE

SYS$SYSROOT:[SYSUPD]

- EPC$DEINSTAL.COM
- EPC$VMSINSTAL_CALLBACK.COM

EPC$EXAMPLES:

- EPC$INSERT.COM
- ACMSV31_FAC_DEF.EPC$DEF
- DBMSV41_FAC_DEF.EPC$DEF
- RDBV31_FAC_DEF.EPC$DEF
- RDBV31A_FAC_DEF.EPC$DEF
- ALLIN1V24_FAC_DEF.EPC$DEF
- EPC$ATM-SAMPLE.EXE
- EPC$ATM-SAMPLE.C
- EPC$ATM-SAMPLE.COB
- EPC$ATM-SAMPLE.FOR
- EPC$ATM-SAMPLE.PAS
- EPC$ATM-SAMPLE.DAT
- EPC$ATM-PASCAL.DAT
- EPC$ATM-FAC-DEF.COM
- EPC$ATM-SAMPLE-EXTENDED.C
- EPC$ATM-FAC-DEF-EXTENDED.COM

SYS$SYSROOT:[SYSTEST]

- EPC$IVP.COM
- EPC.DIR

SYS$SYSROOT:[SYSTEST.EPC]

- EPC$IVP.EXE
- EPC$DCF.DAT
- EPC$IVP_DB.RDB
- EPC$IVP_DB.SNP
- EPC$IVP_DETAIL.TXT

EPC$DATABASE_DIR:

- EPC$ADMIN_DB.RDB
- EPC$ADMIN_DB_AREA_01.RDA
- EPC$ADMIN_DB_AREA_01.SNP
- EPC$ADMIN_DB_AREA_02.RDA
- EPC$ADMIN_DB_AREA_02.SNP
- EPC$ADMIN_DB_AREA_05.RDA
- EPC$ADMIN_DB_AREA_05.SNP
- EPC$ADMIN_DB_AREA_06.RDA
- EPC$ADMIN_DB_AREA_06.SNP
- EPC$ADMIN_DB_AREA_SYS.RDA
- EPC$ADMIN_DB_AREA_SYS.SNP
- EPC$HISTORY_DB.RDB
- EPC$HISTORY_DB.SNP

EPC$HOME_DIR:

- EPC$REGISTRAR*.LOG (EPC$REGISTRAR log)
- *_EPC$REGISTRAR*.LOG (Old EPC$REGISTRAR logs)

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