AA–ML41B–TE

DECdecision

Installation and System Management Guide

DECdecision is a decision-support environment with database, spreadsheet, and charting components, and a cross-component macro facility. This guide describes how to install and maintain DECdecision on a VMS system.

Operating System: VMS Version 5.3-1 or higher

Software Version: DECdecision Version 1.1

digital equipment corporation
maynard, massachusetts

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Preface

DECdecision is a decision-support environment with database, spreadsheet, and charting components, and a cross-component macro facility.

Purpose of This Guide

This guide describes how to install and maintain DECdecision on the VMS operating system. You should review the entire guide before you start the installation.

Who Should Use This Guide

This guide is for VMS system managers or others responsible for installing system software. To install the DECdecision software, you must have access to a privileged account such as the SYSTEM account, and you must be familiar with the VMS installation procedure, VMSINSTAL.COM.

Structure of This Guide

The guide has four chapters and three appendixes. Chapter 1 describes installation prerequisites and pre-installation procedures. Chapter 2 describes the installation procedure. Chapter 3 describes required post-installation procedures. Chapter 4 provides information about managing your DECdecision environment. Appendix A shows a sample printout of a first-time installation. Appendix B shows a sample printout of an upgrade from DECdecision Version 1.0 to Version 1.1. Appendix C shows the files that are transferred to your system when you install DECdecision.

For More Information

Refer to the following manuals for more information about DECdecision:

- *DECdecision Overview*—provides a tutorial and general information on using DECdecision
- *DECdecision Access User's Guide*—describes how to use Access
- *DECdecision Calc User's Guide*—describes how to use Calc
- *DECchart User's Guide*—describes how to use DECchart
- *DECdecision Builder User's Guide*—describes how to use Builder
- *DECdecision Calc Macro Guide*—describes how to use the Calc Macro Language
- *Converters Reference Guide*—describes the table and document converters packaged with DECdecision and DECwrite
- *DECdecision Release Notes*—describes problems and workarounds for this version of DECdecision

For more information about DECwindows, see the *VMS DECwindows User's Guide*.

For more information about the VMSINSTAL command procedure, see one of the following manuals:

- *VMS System Manager's Manual*, in the VMS base documentation set
- *Guide to Setting Up a VMS System*, in the VMS system management kit.

Conventions

The following conventions are used in this guide:

Return	In procedures, key names are shown enclosed to indicate that you press a key on the keyboard.
Ctrl/x	A sequence such as Ctrl/x indicates that you must hold down the key labeled Ctrl while you press another key or a pointing device button.
( )	In format descriptions, parentheses indicate that, if you choose more than one option, you must enclose the choices in parentheses.
[ ]	In format descriptions, brackets indicate that whatever is enclosed is optional; you can select none, one, or all of the choices.

{ }	In format descriptions, braces surround a required choice of options; you must choose one of the options listed.
user input	Blue-green ink indicates information that you must enter from the keyboard or a screen object that you must choose or click on. In the Bookreader, information you must enter from the keyboard is indicated by boldface text.
italic text	Italic text represents information that can vary in system messages (for example, Internal error *number*).
UPPERCASE TEXT	Uppercase letters indicate that you must enter a command (for example, enter OPEN/READ). Uppercase letters also indicate the name of a routine, the name of a file, the name of a file protection code, or the abbreviation of a system privilege.
DECdecision	The term DECdecision refers to the DECdecision™ software.
DECchart	The term DECchart refers to the DECchart™ software.
DECwrite	The term DECwrite refers to the DECwrite™ software.

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Preparing for Installation

This chapter describes tasks that you must complete before installing DECdecision. Installing DECdecision is similar to installing other VMS layered products. You must do the following:

- Take an inventory of the software distribution kit.
- Make sure that your system has the prerequisite hardware, and that is has enough memory and available disk space to install and run DECdecision.
- Make sure that your system has the required VMS operating system components and the prerequisite software.
- If you are installing on a VAXcluster, decide how best to install DECdecision, depending on your configuration.
- Register and load your DECdecision license.
- Check that the account you use to install the software has the required privileges and quotas.
- Decide what values your VMS system parameters should have.
- Prepare your DECdecision Access and Rdb/VMS databases.
- Back up your system disk.
- Advise your users when the installation will take place and how long it will take. The full installation takes approximately 1 hour and 20 minutes on a VAX-11/780 system. Your time may vary depending on your system configuration and the type of installation media.

Once you have prepared your system, you can then perform the installation procedure as described in Chapter 2, and any necessary post-installation procedures as described in Chapter 3.

1.1 Checking the Distribution Kit

Each DECdecision distribution kit contains:

- A bill of materials (BOM) and indented bills report (BIL)
- The distribution medium for the DECdecision software
- Documentation for the product

  Media Only kits include just the installation guide.
- The DECDECISION-USER software license

  If you are upgrading from DECdecision Version 1.0, you do not receive a new license. Your current license is still valid.

To ensure that you have a complete kit, check the kit contents against the bill of materials and the indented bills report.

Check also that you received the correct distribution medium, labeled as DECdecision Version 1.1.

If your kit is damaged or parts of it are missing, contact your Digital representative.

1.2 Prerequisite Hardware

DECdecision runs on all hardware configurations supported by DECwindows Version 2.0 with 8 MB or greater of memory.

For more information, refer to your Software Product Description, 25.G2.01, and your System Support Addendum, 25.G2.01-A.

1.3 Prerequisite Software

To install DECdecision, you must have:

1. A valid VMS operating system configuration running VMS Version 5.3-1 or higher and DECwindows Version 2.0
2. Your DECdecision software license registered

   See Section 1.5 for more information.
3. One of the following Rdb/VMS kits:
   - Rdb/VMS Full Development Kit Version 3.0 or higher
   - Rdb/VMS Interactive Kit Version 3.0 or higher
   - Rdb/VMS Run-Time Kit Version 3.1A-0 or higher

   If your system has no version of Rdb/VMS, DECdecision automatically installs Run-Time Rdb/VMS Version 3.1A-0.

If your system has Run-Time Rdb/VMS Version 3.1 or earlier, DECdecision replaces it with Run-Time Rdb/VMS Version 3.1A-0.

Note *If you are currently using the version of Rdb/VMS that was installed with DECdecision Version 1.0, you have Run-Time Rdb/VMS Version 3.0-B. DECdecision will replace it with Run-Time Rdb/VMS Version 3.1A-0.*

If your system has a pre-3.0 version of either Development or Interactive Rdb/VMS, you must upgrade to Version 3.0 or higher before installing DECdecision.

For more information, refer to your Software Product Description, 25.G2.01, and your System Support Addendum, 25.G2.01-A.

1.4 Required Operating System Components

DECdecision requires the following VMS Version 5.3-1 components:

- VMS required files (BASE)
- Network support (NETWORK)
- Programming support (PROG)
- Secure user's environment (USER)
- Utilities (UTIL)

If your system does not meet these requirements, the installation will fail. You must install the required software using VMSTAILOR before performing the DECdecision installation.

1.5 Registering Your License

You must register and load your DECdecision software license. The information you need is in the Product Authorization Key (PAK) shipped with the product. The PAK is a paper certificate that contains data about your license.

You must register the license before you install DECdecision. If you do not, you are informed during the installation procedure that you have not registered it, and the installation fails.

Note *If you are upgrading from DECdecision Version 1.0 or you are re-installing DECdecision Version 1.1, you do not need to re-register your license. Your current license is still active.*

To register the license for the initial installation, first log in to a privileged account such as the system manager's account, SYSTEM. Then use the License Management Facility to perform the registration, choosing one of the following procedures (the second method is faster for experienced users):

- Invoke the SYS$UPDATE:VMSLICENSE.COM procedure. When prompted for information, respond with data from your Product Authorization Key (PAK).
- Issue the DCL command LICENSE REGISTER with the appropriate qualifiers that correspond to information on the PAK.

If you plan to use DECdecision 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 3.2 for more information.

For complete information on using the License Management Facility, see your VMS documentation set.

1.6 DECdecision Sample Files

During the installation, DECdecision creates the default root directory SYS$COMMON:[DECISION], plus a subdirectory for each component. The installation procedure then places component sample files in the subdirectories. Users may find these sample files helpful for learning how to use DECdecision.

Table 1–1 lists the directories and their logical names. Table 1–2 provides descriptions of the sample files.

Table 1–1 DECdecision Default Directories

Component	Directory	Logical Name
DECdecision	SYS$COMMON:[DECISION]	DECISION$LIBRARY
Access	SYS$COMMON:[DECISION.ACCESS]	DECISION$ACCESS_LIBRARY
Builder	SYS$COMMON:[DECISION.BUILDER]	DECISION$BUILDER_LIBRARY
Calc	SYS$COMMON:[DECISION.ECALC]	DECISION$ECALC_LIBRARY
DECchart	SYS$COMMON: [SYSHLP.EXAMPLES.DECCHART]	None

Table 1–2 DECdecision Sample Files

File	Description
Access	
DECISION$ACCESS_SAMPLE.RDB	An EXAMPLES folder that is placed in the user's default database. It contains ten tables representing a variety of business uses.
Builder	
DECISION$BUDGET_SUMMARY.BLUEPRINT	A blueprint that opens an Access table, generates a report, and displays it using the CDA Viewer.
DECISION$TUTORIAL.BLUEPRINT	A blueprint used in the DECdecision tutorial. See Chapter 2 of the *DECdecision Overview* for more information.
Calc	
DECISION$INTEREST_TABLE.TABLE	A spreadsheet used in Chapter 1 of the *DECdecision Calc Macro Guide*.
DECISION$MACRO_EXAMPLE.TPU	A macro procedure used in Chapter 1 of the *DECdecision Calc Macro Guide*.
DECISION$YEARLY_REV.TABLE	A spreadsheet used in the DECdecision tutorial. See Chapter 2 of the *DECdecision Overview* for more information.
DECchart	
CHART$SAMPLE.CHART	A sample chart.
CHART$SAMPLE.CHART_STYLE	Style information for the sample chart.
CHART$SAMPLE.TABLE	Worksheet information for the sample chart.

1.7 VAXcluster Considerations

You can install DECdecision on a VAXcluster.

In a common-environment VAXcluster, you can install DECdecision on the VAXcluster boot node. This allows more than one VAX processor to share the same DECdecision software.

In a multiple-system VAXcluster, you can install DECdecision on each system disk in the cluster.

You must make sure that each node where you plan to install or run DECdecision meets the minimum system parameter value requirements. See Section 1.8.5 for a list of required system parameter values.

After you install DECdecision, you must run the DECdecision startup command procedure (SYS$STARTUP:DECISION$STARTUP.COM) and load the software license on every cluster node where you want to run DECdecision. See Section 3.1 and Section 3.2 for more information.

1.8 Preparing Your System and the Installing Account

This section tells you which characteristics of your system and installing account you need to check before you install DECdecision. These characteristics include:

- Account privileges
- Account quotas
- Disk space requirements
- System parameters

You must adjust those characteristics of your system and account that do not match the minimum values required for installing and running DECdecision.

1.8.1 Checking Privileges of the Installing Account

The account you use to install DECdecision must have the user privilege SETPRV. As one of the first actions, the VMSINSTAL command procedure grants all privileges (except BYPASS) to the process that invokes it. This command succeeds only if the account has SETPRV.

On most systems, the SYSTEM account has SETPRV and is used to install software. The procedures described in this installation guide refer to the SYSTEM account, but they are the same for any account with SETPRV.

1.8.2 Checking Quotas of the Installing Account

The installing account must have sufficient quotas to perform the installation. Table 1–3 summarizes the minimum account quotas required.

Table 1–3 Minimum Installing Account Quotas

Account Quota	Value	Description
ASTLM	100	AST queue limit
BYTLM	30,000	Buffered I/O byte count limit
ENQLM	2000	Lock queue limit
FILLM	100	Open file limit
MAXDETACH	0	Maximum number of detached processes
PGFLQUO	20,000	Paging file limit
PRCLM	1	Subprocess creation limit
WSEXTENT	2048	Working set extent
WSQUO	512	Working set quota

Account quotas are stored in the file SYSUAF.DAT. Use the VMS Authorize Utility to verify and change user account quotas. Follow these steps:

1. Set your directory to SYS$SYSTEM and then run AUTHORIZE as follows:

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

2. At the AUTHORIZE prompt (UAF>), use the SHOW command with an account name to check your account. For example:

```
UAF>  SHOW SMITH
```

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

   MODIFY account-name /quota-name=nnnn

   For example, to change the FILLM quota to 100 for the SMITH account, then exit from the Authorize Utility, you would enter the following:

```
UAF>  MODIFY SMITH /FILLM=100
UAF>  EXIT
```

After you exit from the utility, the VMS system displays messages indicating whether 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 description of the AUTHORIZE utility in the VMS system management documentation.

1.8.3 System Disk Space Requirements

Your system must have sufficient disk storage space to accommodate the installation. Table 1–4 lists the required free disk blocks.

The disk space requirement will vary depending on whether DECdecision is also installing Run-Time Rdb/VMS. If you already have Development Rdb/VMS Version 3.0 or higher, Interactive Rdb/VMS Version 3.0 or higher, or Run-Time Rdb/VMS Version 3.1A-0 installed, your disk space requirements are less.

If you are currently using the version of Rdb/VMS that was installed with DECdecision Version 1.0 (Run-Time Rdb/VMS Version 3.0-B), DECdecision will replace it with Run-Time Rdb/VMS Version 3.1A-0.

Table 1–4 summarizes the disk blocks required for either case.

Table 1–4 Free Disk Blocks Required

Installation Type	Free Blocks Required During Installation	Blocks Used After Installation
With Rdb	48,500	42,500
Without Rdb	25,500	24,500

Use the DCL command SHOW DEVICE to determine the number of free blocks that are presently available on the system disk, as follows:

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

If the disk does not have enough free blocks, delete unnecessary files to provide the space required.

1.8.4 User Disk Space Requirements

When a user runs DECdecision Access for the first time, Access creates a default user database. The two files, named DECISION$ACCESS_DB.RDB and DECISION$ACCESS_DB.SNP, require a total of 1452 free disk blocks. Over time, more disk space will be required as the user adds new tables to the database or creates new databases.

1.8.5 System Parameter Values

Table 1–5 lists the minimum system parameter values required for DECdecision installation and use. If your parameters are higher, do not lower them. Other applications on your system may require higher values than these minimum values.

On a VAXcluster, you must not only adjust the system parameters of nodes on which you install DECdecision, but also the nodes on which you intend to run DECdecision.

Table 1–5 Required Minimum System Parameter Values

System Parameter	Minimum Value	Type
CHANNELCNT	A number larger than the largest FILLM used on the system. DECdecision requires a minimum FILLM of 100. See Table 3–1.	
CLISYMTBL[1]	500	Dynamic
GBLPAGES[2]	10,000 (unused global pages)	
GBLPAGFIL	2048	
GBLSECTIONS	61 (unused global sections)	
LOCKIDTBL	256	
LOCKIDTBL_MAX	2048	Dynamic
MAXBUF	1584	Dynamic
PQL_DBYTLM	20,000	
PROCSECTCNT	64	
RESHASHTBL	512	
SRPCOUNT	1024	
SRPCOUNTV	2048	
VIRTUALPAGECNT	20,000	

[1]Required only for installation

[2]Each DECwindows application run locally on a workstation uses approximately 300 global pages. Each invocation of a DECdecision component works as a DECwindows application and therefore uses 300 global pages. You should set your global pages count high enough to account for this. See Section 4.1.2.

For information on the parameters and quotas required to run VAX Rdb/VMS and for information on tuning your Rdb/VMS database system, see the *VAX Rdb/VMS Installation Guide* and the *VAX Rdb/VMS Guide to Database Maintenance and Performance*. Also see Section 4.1.2 in this guide.

1.8.5.1 Checking Parameter Values

To check the value of a system parameter, enter the following command at the DCL prompt:

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

At the SYSGEN> prompt, use the SHOW command to display the value of each system parameter. The value displayed in the Current column should equal or exceed the value of each parameter listed in Table 1–5. For example, the following command displays the value for the MAXBUF system parameter:

```
SYSGEN>  SHOW MAXBUF
```

After you finish checking parameter values, use the EXIT command to return to DCL level.

1.8.5.2 Calculating GBLPAGES and GBLSECTIONS Parameter Values

The values for GBLPAGES and GBLSECTIONS in Table 1–5 indicate that you must have at least 10,000 unused global pages and 61 unused global sections available for the installation.

To calculate the number of unused global pages and global sections on your system, perform these steps:

1. Use the DCL F$GETSYI lexical function to determine the number of free global pages and global sections:

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

2. If the number of unused global pages or global sections is less than the number specified in Table 1–5, you must increase the value using the AUTOGEN command procedure, as shown in Section 1.8.5.3.

1.8.5.3 Changing Parameter Values with AUTOGEN

Use the AUTOGEN command procedure to change system parameters. AUTOGEN automatically adjusts values for parameters that need to be changed. To change system parameters with AUTOGEN:

1. Edit the following file:

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

   For example, to increase the setting for the GBLPAGES system parameter by 2000, add this line to the file:

   ```
   ADD_GBLPAGES = 2000
   ```

2. Run the AUTOGEN procedure to recalculate your system parameters and reboot the system. Enter the following command at the DCL prompt:

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

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

AUTOGEN 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 parameter on the AUTOGEN command line as well. For example:

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

For more information about using AUTOGEN, see the instructions on modifying system parameters in the VMS system management documentation.

1.9 Preparing Your Databases

The following sections discuss the procedures for preparing your DECdecision Access or other Rdb/VMS databases for the DECdecision installation.

If your system has Run-Time Rdb/VMS Version 3.1 or earlier, you need to perform the tasks in Section 1.9.1 and Section 1.9.2.

Note *If you are currently using the version of Rdb/VMS that was installed with DECdecision Version 1.0, you have Run-Time Rdb/VMS Version 3.0-B.*

If your system has Development or Interactive Rdb/VMS Version 3.0 or higher installed, you do **not** need to perform these tasks. Proceed to Section 1.10.

1.9.1 Recovering the Databases

Before installing DECdecision, you must eliminate all obsolete recovery-unit journal (RUJ) files. The before-image journaling facility is version specific; if you do not recover your database before installing a new version of Rdb/VMS, you will not be able to access the database after DECdecision is installed.

Use the following command on each disk device to locate any RUJ files:

```
$  DIRECTORY <disk-name>:[000000...]*.RUJ;*
```

For each RUJ file associated with an Rdb/VMS database, check with the user to make sure that the database isn't currently open. Then, recover the database by invoking it using the RDO interactive utility. For example:

```
$  DIRECTORY DISK1:[000000...]*.RUJ;*

Directory DISK1:[USER.ACCESS]

DECISION$ACCESS_DB.RUJ;2

Total of 1 file.

Grand total of 1 directory, 1 file.

$  SET DEFAULT DISK1:[USER.ACCESS]
$  RUN SYS$SYSTEM:RDO
RDO>  INVOKE DATABASE FILENAME 'DECISION$ACCESS_DB';
RDO>  EXIT
```

The database is now recovered.

1.9.2 Exporting the Databases

Before installing DECdecision, you must use the RDO EXPORT statement to export all existing Rdb/VMS databases. These databases include both the Access system databases stored in the DECISION$ACCESS_LIBRARY directory and all private user databases stored in individual directories. You must also export all CDD/Plus dictionaries as well as databases created by other products such as VAX TEAMDATA.

The EXPORT statement makes a copy of a database in an intermediate, compressed form. By exporting all your databases before installing DECdecision, you have a second method of database conversion available to you in case the RMU/CONVERT post-installation procedure (see Section 3.4) does not work.

The following example shows how to export both system and private DECdecision Access databases:

1 Notify the users that you plan to export all databases and warn them not to open any databases during this activity.

2 Locate all the databases by searching each disk on your system. For example:

```
$  DIR [000000...]*.RDB;*

Directory SYS$COMMON:[000000.DECISION.ACCESS]

DECISION$ACCESS_DEFDB.RDB;1       DECISION$ACCESS_SAMPLE.RDB;1
DECISION$ACCESS_SYSDB.RDB;1

Total of 3 files.

$  DIR DISK1:[000000...]*.RDB;*

Directory DISK1:[USER.ACCESS]

DECISION$ACCESS_DB.RDB;1
```

```
Total of 1 file.
```

3 Set default to the system directory where the Access databases reside. For example:

```
$  SET DEFAULT DECISION$ACCESS_LIBRARY
```

4 Run RDO and export the databases:

```
$  RUN SYS$SYSTEM:RDO
RDO>  EXPORT
cont>  'DECISION$ACCESS_DEFDB.RDB' INTO
cont>  'DECISION$ACCESS_DEFDB.RBR'
RDO>  EXPORT
cont>  'DECISION$ACCESS_SAMPLE.RDB' INTO
cont>  'DECISION$ACCESS_SAMPLE.RBR'
RDO>  EXPORT
cont>  'DECISION$ACCESS_SYSDB.RDB' INTO
cont>  'DECISION$ACCESS_SYSDB.RBR'
RDO>  EXIT
```

5 Continue in a similar manner to export the rest of the databases. For example:

```
$  SET DEFAULT DISK1:[USER.ACCESS]
$  RUN SYS$SYSTEM:RDO
RDO>  EXPORT
cont>  'DECISION$ACCESS_DB.RDB' INTO
cont>  'DECISION$ACCESS_DB.RBR'
RDO>  EXIT
```

As an additional precaution, you can also back up your databases using the RMU/BACKUP command:

```
$  RMU/BACKUP DECISION$ACCESS_DB DECISION$ACCESS_DB_BACKUP
```

See the *VAX Rdb/VMS RDO and RMU Reference Manual* for more information about the RDO EXPORT statement and the RMU/BACKUP command.

After the DECdecision installation ends successfully, you must convert the internal data structures for all databases of earlier versions. See Section 3.4 for more information.

1.10 Shutting Down Current Versions of Rdb/VMS and DECdecision

If you are currently running Development or Interactive Rdb/VMS Version 3.0 or higher, you do not need to shut down Rdb/VMS before installing DECdecision.

If you are currently running Run-Time (RTO) Rdb/VMS Version 3.1 or earlier, you must shut down Rdb/VMS before installing DECdecision. If you do not shut down Rdb/VMS, you receive an error message to that effect, and the installation fails.

To shut down Rdb/VMS, use the following DCL command:

```
$  @SYS$MANAGER:RMONSTOP.COM
```

If you are upgrading or re-installing DECdecision, you must first shut down the current version of DECdecision before performing the installation. To shut down DECdecision, use the following DCL command:

```
$  @SYS$MANAGER:DECISION$SHUTDOWN.COM
```

If you are running DECdecision on a VAXcluster, be sure to shut down Rdb/VMS and DECdecision on all the cluster nodes. For example:

```
$  RUN SYS$SYSTEM:SYSMAN
SYSMAN>  SET ENVIRONMENT/CLUSTER/USERNAME=SYSTEM
Remote Password:  supply SYSTEM password here
SYSMAN>  DO @SYS$MANAGER:RMONSTOP.COM
SYSMAN>  DO @SYS$MANAGER:DECISION$SHUTDOWN.COM
SYSMAN>  EXIT
```

1.11 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. If a system failure occurs at a critical point during the installation, some of the files could be corrupted. Therefore, you should back up your system disk before attempting any software installation.

For more information on backing up your system disk, see the section on the Backup Utility in the VMS system management subkit documentation.

1.12 Determining and Reporting Problems

If you encounter a problem while using DECdecision, report it to Digital. Depending on the nature of the problem and the type of support you have, you can take one of the following actions:

- Call Digital if your software contract or warranty agreement entitles you to telephone support.
- Submit a Software Performance Report (SPR).
- Fill out and submit a Reader's Comments form if the problem has to do with the DECdecision documentation. There are Reader's Comments forms at the back of each manual. Use the form from the manual in which you found the error. Include the section number and page number.

Review the Software Product Description (SPD) and Warranty Addendum for an explanation of your warranty. If you encounter a problem during the warranty period, report the problem as indicated above or follow alternate instructions provided by Digital for reporting SPD nonconformance problems.

1.13 Pre-Installation Check List

Table 1–6 summarizes the tasks you must perform before installing DECdecision. Check to make sure that you have performed all these tasks before proceeding with the installation.

Table 1–6 Pre-Installation Check List

Task	For More Information
Check that you have the prerequisite hardware and software	See Section 1.2 and Section 1.3
Register and load your license	See Section 1.5
Check privileges and quotas of the installing account	See Section 1.8.1 and Section 1.8.2
Check that you have enough disk space	See Section 1.8.3
Check system parameters	See Section 1.8.5
Prepare your databases	See Section 1.9
Shut down current versions of Rdb/VMS and DECdecision	See Section 1.10
Back up your system disk	See Section 1.11

2

Installing DECdecision

This chapter describes the procedure for installing DECdecision and running the Installation Verification Procedure (IVP).

Before you begin installing DECdecision, make sure that your system meets the requirements outlined in Chapter 1.

The full installation takes approximately 1 hour and 20 minutes on a VAX-11/780 system. Your time may vary depending on the configuration of your system, the choices you make during the installation, and the type of media you use.

2.1 Installation Overview

There are three varieties of DECdecision installation:

- Installing DECdecision for the first time

  Appendix A shows a first-time installation, with the Rdb/VMS and DECchart components installed as well.

- Upgrading from DECdecision Version 1.0

  Appendix B shows an installation upgrade from DECdecision Version 1.0 to Version 1.1.

- Re-installing DECdecision Version 1.1

During each installation, DECdecision checks to see if your system has the correct versions of the Rdb/VMS and DECchart components. If a component is out of date or missing, then DECdecision installs the correct version. If the correct version of a component is already on the system, DECdecision does not replace it.

As a result, the installation procedure can change depending on what versions of Rdb/VMS and DECchart are currently installed. There may be different disk space requirements, installation times, save sets restored, questions asked, and directories created.

Table 2–1 explains how the DECdecision installation deals with different versions of the Rdb/VMS component. Table 2–2 explains how the DECdecision installation deals with different versions of the DECchart component. Table 2–3 shows which save sets contain the files for the various components.

Table 2–1 Rdb/VMS Component Installation

Current Rdb/VMS Version	DECdecision Installation Action
None	Installs Run-Time Rdb/VMS Version 3.1A-0.
Development Rdb/VMS Version 3.0 or higher	Does not replace it.
Interactive Rdb/VMS Version 3.0 or higher	Does not replace it.
Run-Time Rdb/VMS Version 3.1 or earlier	Installs Run-Time Rdb/VMS Version 3.1A-0.
Run-Time Rdb/VMS Version 3.1A-0 or higher	Does not replace it.

Table 2–2 DECchart Component Installation

Current DECchart Version	DECdecision Installation Action
None	Installs DECchart Version 1.1.
DECchart Version 1.0	Prints a message and asks if you want to proceed. If you answer YES, it installs DECchart Version 1.1.
DECchart Version 1.1	Prints a message and asks if you want to re-install DECchart Version 1.1. However, should a higher version exist in the future, DECdecision will not replace it. (Currently DECchart Version 1.1 is the highest version.)

Table 2–3 DECdecision Save Set Contents

Component	Save Sets
DECdecision	A,F,H
Rdb/VMS	B,D
DECchart	C,E,G

2.2 Running the VMSINSTAL Command Procedure

Use the VMSINSTAL command procedure to install DECdecision. For more information about VMSINSTAL, refer to the following books in your VMS documentation set:

- *VMS System Manager's Manual*, in the VMS base documentation set
- *Guide to Setting Up a VMS System*, in the VMS system management subkit.

If VMSINSTAL detects a problem during the installation procedure, it notifies you and asks if you want to continue. To stop the installation and correct the problem, enter NO or press RETURN. After you have made the correction, you can restart the installation.

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

Note *Do not attempt to install DECdecision twice consecutively from the VMSINSTAL Products: prompt. If you want to install DECdecision a second time you must re-invoke the VMSINSTAL procedure from the DCL prompt.*

DECdecision sets global symbols that are cleared when you invoke VMSINSTAL. The installation may not behave correctly if the symbols are not cleared.

Follow these steps to install DECdecision:

1 **Log in to the SYSTEM account.**

Log in at the operator's console terminal under the system manager's account, SYSTEM.

2 **Notify the users.**

Send a message requesting that all users log out. Use the DCL REPLY command to inform users of the schedule for the installation. Use the SET LOGINS command to prevent others from logging in:

```
$  REPLY/USER "Installation starting in 5 minutes. Please log out."
$  SET LOGINS/INTERACTIVE=0
```

3 Invoke VMSINSTAL.

Enter the following command line to run VMSINSTAL.COM:

```
$ @SYS$UPDATE:VMSINSTAL DECISION011 ddcu: OPTIONS N
```

where:

- *@SYS$UPDATE:VMSINSTAL* invokes VMSINSTAL
- *DECISION011* is the save set name for the DECdecision software
- *ddcu:* is the device specification for the distribution medium, for example, MUA0:.
- *OPTIONS N* is 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. Digital recommends that you review the release notes before proceeding with the installation.

After you invoke VMSINSTAL, you see the following message:

```
        VAX/VMS Software Product Installation Procedure V5.3-1

It is 05-JAN-1990 at 09:17.

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

4 Answer the backup question.

The installation procedure asks if you have backed up your system disk:

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

If you have not backed up your system disk, you should not continue with the installation until you do so. If you need to back up the system disk, enter NO. VMSINSTAL exits and returns you to the DCL prompt. Back up your system disk, and then start VMSINSTAL again.

If you have already backed up the system disk, press RETURN to continue.

5 Mount the media.

You receive instructions to mount the distribution medium on the device you specified when you invoked VMSINSTAL (MUA0: in this example):

```
Please mount the first volume of the set on MUA0:.
* Are you ready?
```

Mount the distribution medium and enter YES to indicate that you are ready to continue.

The following messages appear on your terminal:

```
%MOUNT-I-MOUNTED,  DECIS mounted on _MUA0:

The following products will be processed:

  DECISION V1.1

        Beginning installation of DECISION V1.1 at 09:18

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

6 Print and read the Release Notes.

If you specified OPTIONS N when you invoked VMSINSTAL, you are now asked to choose one of the four options for reviewing the Release Notes:

```
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]:
```

You should review the Release Notes in case they contain any information about changes in the installation procedures. Selecting option 2 prints a copy of the Release Notes.

You are prompted for a print queue:

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

Press RETURN to print the Release Notes on SYS$PRINT, or type a different queue name and press RETURN. You receive a message similar to the following:

```
Job 810 (queue SYS$PRINT, entry 1295) started on SYS$PRINT
```

If you selected options 1 or 3, the Release Notes are displayed.

7 Decide whether or not to continue.

The installation procedure asks if you want to continue:

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

%VMSINSTAL-I-RELMOVED, The product’s release notes have been
successfully moved to SYS$HELP.
```

Enter YES to continue. Otherwise, press RETURN. In either case, the Release Notes are moved to the SYS$HELP directory. The Release Notes are contained in the following file, which you may read or print later:

SYS$HELP:DECISION011.RELEASE_NOTES.

You then see the following message:

```
*************************************************************
*                                                           *
*                     DECdecision V1.1                      *
*           Integrated Decision Support Package             *
*                                                           *
*                  Installation Procedure                   *
*                                                           *
*************************************************************
```

8 **Answer the license registration question.**

The installation procedure asks if you have registered a DECdecision product authorization key, using the License Management Facility (LMF):

```
        Product:      DECDECISION-USER
        Producer:     DEC
        Version:      1.1
        Release Date: 2-APR-1990

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

You must have registered and loaded the product authorization key or the installation fails. Enter YES if your PAK is registered and loaded. The installation then proceeds. If you enter NO, the installation continues but the IVP will not be run. See Section 1.5 for information about registering your product authorization key.

Note *If you are upgrading from DECdecision Version 1.0 or you are re-installing DECdecision Version 1.1, you do not need to re-register your license. Your current license is still active.*

9 **Read messages.**

The following messages display:

```
Checking user parameters
Checking system parameters
Testing dependent product versions

%VMSINSTAL-I-RESTORE, Restoring product save set B ...
%VMSINSTAL-I-RESTORE, Restoring product save set C ...
```

10 **Answer the Rdb/VMS upgrade question.**

The following messages display if your system has an earlier, unsupported version of Run-Time Rdb/VMS. DECdecision installs Run-Time Rdb/VMS Version 3.1A-0.

If you have Development or Interactive Rdb/VMS Version 3.0 or higher installed, you do not see this question. Proceed to step 11. See Table 2–1 for more information on how DECdecision handles the Rdb/VMS installation.

```
********************************************************
This kit requires Rdb/VMS Version 3.1A-0 RTO or later.

Rdb/VMS Version 3.1A-0 RTO will be installed since an earlier version
exists on your system.

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

* Do you want to proceed [YES]?
```

Press RETURN to continue the installation.

If DECdecision is upgrading Rdb/VMS, you see these messages:

```
             Before You Install Rdb/VMS Software

    The on-disk structure of Rdb/VMS database files has changed.
    As a result, databases created under previous versions of
    Rdb/VMS are incompatible with this software.
    To use this software with a current Rdb/VMS database
    perform the following tasks:

    o Before installing VAX Rdb/VMS Version 3.1A-0:

      - Export each database, including any CDD/Plus dictionaries,
        with your currently installed version of Rdb/VMS using the
        using the RDO EXPORT statement. The export MUST be
        performed using currently installed software.

      - As a precaution, backup each database with the VMS Backup
        Utility.

    o After installing VAX Rdb/VMS Version 3.1A-0:

      - For any databases, including CDD/Plus dictionaries,
        created with a version of Rdb/VMS software earlier
        than V3.1A-0, use RMU/CONVERT.

* Did you export your current databases [NO]:
```

If you have exported your databases, enter YES. If not, press RETURN. See Section 1.9.2 for instructions on how to export your databases.

11 **Answer the DECchart upgrade question.**

DECdecision installs DECchart Version 1.1. The following messages display if your system has an earlier version of DECchart:

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

This kit requires DECchart V1.1 or later

DECchart V1.1 will be installed since an earlier version
exists on your system.

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

* Do you want to proceed [YES]?
```

Press RETURN to continue the installation.

Your message may vary depending on whether you have DECchart installed and what version it is. If you have no version of DECchart currently installed on your system, you see the following message:

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

This kit requires DECchart V1.1 or later

DECchart V1.1 will be installed since it does
not exist on your system.

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

See Table 2–2 for a description of the ways DECdecision handles the DECchart installation.

12 Create the library directories.

This question differs depending on whether you are installing DECdecision for the first time or upgrading from a previous version of DECdecision. The installation procedure asks where you would like to place the library root directories.

- First time installation:

  ```
  The DECdecision product creates a tree of library directories.
  A subdirectory is created for each component.
  * Where would you like to place the DECISION V1.1 library root
  [SYS$COMMON:[DECISION]]:
  ```

  Press RETURN to create the default library, or you can specify another directory.

  The following messages display:

  ```
  %VMSINSTAL-I-SYSDIR, This product creates system disk directory
  VMI$ROOT:[DECISION].
  %VMSINSTAL-I-SYSDIR, This product creates system disk directory
  VMI$ROOT:[DECISION.BUILDER].
  %VMSINSTAL-I-SYSDIR, This product creates system disk directory
  VMI$ROOT:[DECISION.ECALC].
  %VMSINSTAL-I-SYSDIR, This product creates system disk directory
  VMI$ROOT:[DECISION.ACCESS].
  %VMSINSTAL-I-SYSDIR, This product creates system disk directory
  VMI$ROOT:[SYSTEST.DECISION$IVP].
  ```

- Upgrade or re-installation:

  ```
  The directory DECISION$LIBRARY currently exists on your system.
  * Would you like to place the DECISION V1.1 library root there [YES]?
  ```

  Press RETURN to use the default library, or you can specify another directory.

The following messages display:

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

13 Create the RDB$REMOTE account.

You see this question only if you are installing DECdecision with Run-Time Rdb/VMS for the first time. You must enter a valid user identification code (UIC) for the RDB$REMOTE account, as shown in the following displayed messages:

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

This installation requires the creation of the RDB$REMOTE
account.  You MUST choose a UIC and password for this
account.  PLEASE NOTE that your password for the RDB$REMOTE
account and the network object RDBSERVER MUST be exactly the
same.  The password you supply for the RDB$REMOTE account
will be used for the network object as well IF the account is
created by this installation.

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

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

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

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

* Enter UIC to be used for RDB$REMOTE account (e.g. [300,2]):
```

Enter a valid UIC. The UIC values must be octal numbers, and therefore a UIC that contains an 8 or 9 makes the procedure fail. For example, if you enter a UIC value of [282,6], the installation procedure will display an error because you used an 8 in the group number.

14 Enter a password for the RDB$REMOTE account.

You see this question only if you are installing DECdecision with Run-Time Rdb/VMS for the first time. After you enter a valid UIC, the installation procedure displays an informational message about entering a password:

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

The entire installation will FAIL if you do not enter a valid
password for the RDB$REMOTE account.  You will be given
3 chances to verify your password.  This installation
procedure requires at least 6 characters for the
RDB$REMOTE 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 RDB$REMOTE account:
* Please verify the PASSWORD entered for RDB$REMOTE:
```

Enter a valid password. Type the password again to verify it.

If you fail to verify the password in three attempts, the installation fails. You must then restart the installation.

15 Decide whether or not to upgrade the default user database.

You see this question only if you are upgrading or reinstalling DECdecision. The installation procedure asks if you want to replace the default user database:

```
    DECdecision has a default database.
    This is copied to new user's accounts when they first use
    DECdecision.

    This database is installed in DECISION$ACCESS_LIBRARY

Your system already has a default user database.
* Do you want to replace it [NO]?
```

If you have never modified your default user database, enter YES to replace it. If you have made modifications, press RETURN.

16 Decide whether or not to run the IVP.

The installation procedure asks if you want to run the Installation Verification Procedure (IVP):

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

The DECdecision IVP checks to be sure the installation is successful. Digital recommends that you run the IVP. Press RETURN.

17 Specify an IVP display device.

You must specify a workstation on which to display the IVP:

```
The DECdecision IVP requires that a display device be defined (using
the SET DISPLAY command). Please enter the node name of the
workstation on which to display the IVP.

*  Enter node name (or Return to not run IVP):
```

You must specify the node name of a workstation on which security is set up to allow display of the IVP.

To ensure that your display is set up correctly, go to the Session Manager Customize menu and select the Security option. When the list of authorized users displays, add the Node::Username of the node on which you are installing DECdecision.

For example, if you are installing DECdecision from the SYSTEM account on workstation node MYNODE, then you must add MYNODE::SYSTEM to the security database. If you have SET HOST 0 from your own account to use the SYSTEM account, then you must add 0::SYSTEM to the security database. See the *DECwindows User's Guide* for details on the Session Manager's security database.

If you do not have a workstation available, you may press RETURN and the IVP will not be run. See Chapter 3 for directions on running the IVP after the installation.

18 Decide whether or not to purge files.

The installation procedure asks if you want to purge (delete) old versions of files replaced by this installation:

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

Purging is recommended. Press RETURN to purge the old files. However, if you need to keep files from the previous version, enter NO.

19 Decide whether or not to continue.

The installation procedure displays a time estimate and then asks if you want to continue:

```
    To complete the installation on a standalone VAX 11/780
    will take approximately:

        1 hour and 5 minutes to install
        16 minutes to run the IVP

    All required questions have been asked.
    You can terminate the installation procedure at this time.

* Do you want to continue the installation [YES]?
```

Press RETURN to continue the installation.

20 Check informational messages.

The installation procedure displays a series of messages as it performs the following installation tasks:

- Restores files
- Reminds you to edit SYSTARTUP_V5.COM
- Creates the RDB$REMOTE account

- Places RDBSERVER in the DECnet object database and provides information
- Creates Rdb/VMS and DECchart directories
- Transfers files to their directories
- Starts the Rdb/VMS monitor
- Assigns SQL logicals
- Installs the Access databases

Your messages may vary depending on the type of installation you are performing. For example, if you are upgrading or re-installing DECdecision, or you already have installed Development or Interactive Rdb/VMS V3.0 or higher, you do not see any of the Rdb messages. See Appendix A for a listing of messages shown during a first-time installation. See Appendix B for a listing of messages shown during an upgrade from DECdecision V1.0.

```
%VMSINSTAL-I-RESTORE, Restoring product save set D ...
%VMSINSTAL-I-RESTORE, Restoring product save set E ...
%VMSINSTAL-I-RESTORE, Restoring product save set F ...
%VMSINSTAL-I-RESTORE, Restoring product save set G ...
%VMSINSTAL-I-RESTORE, Restoring product save set H ...

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

  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 DECdecision

      $ @SYS$STARTUP:DECISION$STARTUP.COM

  The following command line should be added to the system
  shutdown command file SYS$MANAGER:SYSHUTDWN.COM for all nodes
  that will be running DECdecision

      $ @SYS$MANAGER:DECISION$SHUTDOWN.COM

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

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

%DECISION-I-ACCOUNT, This installation creates an account named RDB$REMOTE.

RDBSERVER has been placed in the DECnet object database as number 35.

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

    SYSTEM MANAGER:

    If your DECnet object database is not configured to be in
    the cluster common directory, then you will need to perform
    the following:
```

```
    In order to have remote access on another node which shares
    this cluster common root directory, you must insert
    RDBSERVER.EXE into that node's DECnet object database by:

        a) Logging into that node, and
        b) Invoking SYS$COMMON:[SYSMGR]RDBSERVER_NCP.COM.

    This command procedure inserts RDBSERVER into the node's
    permanent DECnet object database.  This procedure only needs
    to be executed ONCE per node.

    This command procedure will prompt for a password for
    the object RDBSERVER. This password must match the
    password established for the account.

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

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

    The RDBSERVER object automatically uses the RDB$REMOTE
    account created by this installation procedure.

    Invoking a database should look like:

    $DEFINE MYDB "<node>::<dev>:<dir><db-name>"
    $RDO
    RDO> DATABASE FILE MYDB

%VMSINSTAL-I-SYSDIR, This product creates system disk directory
VMI$ROOT:[SYSHLP.EXAMPLES.RDBVMS].
%VMSINSTAL-I-SYSDIR, This product creates system disk directory
VMI$ROOT:[SYSTEST.RDBVMS].

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

    The Rdb/VMS Installation Verification Procedure (IVP) has
    been provided in SYS$COMMON:[SYSTEST].

    It is invoked using the commands:

        $ SET DEFAULT SYS$COMMON:[SYSTEST]
        $ @RDBIVP RTO

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

%VMSINSTAL-I-SYSDIR, This product creates system disk directory
VMI$ROOT:[SYSMGR.VAXINFO$PRODUCTS].
%VMSINSTAL-I-SYSDIR, This product creates system disk directory
VMI$ROOT:[SYSTEST.CHART$IVP].
%VMSINSTAL-I-SYSDIR, This product creates system disk directory
VMI$ROOT:[SYSHLP.EXAMPLES.DECCHART].

%VMSINSTAL-I-MOVEFILES, Files will now be moved to their target directories...
Rdb/VMS monitor (RDMS_MONITOR) started

SQL: Assigning System-wide SQL Logicals
```

```
*****************************************************************
*                                                               *
*   Installing Sample Database...                               *
*                                                               *
*****************************************************************
*                                                               *
*   Installing Default User Database...                         *
*                                                               *
*****************************************************************
*                                                               *
*   Installing Public Folder Database...                        *
*                                                               *
*****************************************************************
```

21 Run the DECdecision IVP.

The installation procedure runs the DECdecision Installation Verification Procedure:

```
Executing IVP for: DECdecision V1.1

 The IVP runs a Builder BLUEPRINT which will run each component and
 produce intermediate reports and a final chart of the results.
 The reports and chart are compared with the expected values to determine
 if the IVP has completed successfully.

 Starting DECdecision...

Comparing the results of the BLUEPRINT with the expected results

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

        DECdecision V1.1

        IVP COMPLETED SUCCESSFULLY

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

IVP completed for: DECdecision V1.1
```

22 Run the Rdb/VMS IVP.

If you have installed or upgraded Rdb/VMS, the installation procedure runs the Rdb/VMS Installation Verification Procedure:

```
Executing IVP for: VAX Rdb/VMS Version 3.1A-0

Restoring the test database.

Running RDO tests
    Test completed successfully

Running the after-image journaling test.
    Test completed successfully

Running the interpreter test.
    Test completed successfully
```

```
Running the SQL/Services tests.
    You must have proxy enabled to run the sql services ivp program.
    See the Rdb/VMS installation guide for more information.
    All of the sql services files are in their proper directories.

SQL/Services tests completed successfully.

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

    VAX Rdb/VMS V3.1A-0

    Run-Time Only

    IVP COMPLETED SUCCESSFULLY

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

IVP completed for: VAX Rdb/VMS Version 3.1A-0
```

23 End the installation procedure.

The installation procedure ends automatically with the following messages:

```
Installation of DECISION V1.1 completed at 10:30

VMSINSTAL procedure done at 10:31
```

24 Make the system available to users.

After the installation completes successfully, you should reset system logins to your system default (64 in this example). Then send a message to all users stating that the system is again available. Use the following DCL commands:

```
$  SET LOGINS/INTERACTIVE=64
$  REPLY/USER "Installation complete. System is ready for use."
```

3

Post-Installation Procedures

This chapter describes tasks that you must complete after DECdecision is installed.

3.1 Editing System Startup and Shutdown Files

After the installation is complete, you must edit the system startup and shutdown files for all nodes that will be running DECdecision.

Add the following line to your system startup file, SYS$MANAGER:SYSTARTUP_V5.COM, after the line that invokes the network startup command procedure:

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

DECISION$STARTUP.COM also contains the commands to start Rdb/VMS. It runs the command procedures SYS$STARTUP:RMONSTART.COM and SYS$STARTUP:SQL$STARTUP.COM.

Note *If your network startup command procedure runs in batch mode, you may experience a problem starting the SQL portion of Rdb/VMS. SQL$STARTUP.COM contains commands that run the Network Control Program (NCP). If NCP is not yet available when SQL$STARTUP.COM runs, the SQL startup will fail. You can fix the problem by inserting a DCL WAIT command (for example, $ WAIT 00:01 inserts a 1 minute pause) into SYSTARTUP_V5.COM immediately before the line that invokes DECISION$STARTUP.COM.*

Add the following line to your system shutdown file, SYS$MANAGER:SYSHUTDWN.COM:

```
$ @SYS$MANAGER:DECISION$SHUTDOWN.COM
```

This file also contains the commands to shut down your Rdb/VMS monitor.

3.2 Activating DECdecision on a VAXcluster

To activate DECdecision on any type of VAXcluster, you must first install DECdecision on each system disk that is commonly shared among nodes in the cluster. Then you must perform the following procedure to start DECdecision, replace the DCL tables, and load the license on all other nodes in the cluster:

```
$  RUN SYS$SYSTEM:SYSMAN
SYSMAN>  SET ENVIRONMENT/CLUSTER/USER=SYSTEM
Remote Password:  supply SYSTEM password here
SYSMAN>  DO LICENSE LOAD DECDECISION-USER
SYSMAN>  DO INSTALL REPLACE SYS$LIBRARY:DCLTABLES.EXE
SYSMAN>  DO @SYS$STARTUP:DECISION$STARTUP
SYSMAN>  EXIT
```

Note *If you are upgrading from DECdecision Version 1.0, you do not need to load your license. Your current license is still loaded.*

If your DECnet object database is not configured to be in the cluster common directory, then you need to perform the following additional procedure on each cluster node:

1. Log into the node
2. Invoke SYS$COMMON:[SYSMGR]RDBSERVER_NCP.COM

   This command procedure inserts RDBSERVER.EXE into the node's permanent DECnet object database. This procedure only needs to be executed once per node. The command procedure prompts for a password for the object RDBSERVER. This password must match the password established for the RDB$REMOTE account.

3.3 User Account Requirements

DECdecision users must have certain account privileges and quotas. The following two sections contain information about these requirements.

3.3.1 User Account Privileges

To use DECdecision, an account must have at least the TMPMBX and NETMBX privileges. Use the VMS Authorize Utility to determine if users have the privileges they require. See Section 1.8.2 for more information.

3.3.2 User Account Quotas

To use DECdecision, an account must have sufficient quotas. Table 3–1 summarizes the minimum required user account quotas.

Table 3–1 Minimum User Account Quotas

Account Quota	Value	Description
ASTLM	100	AST queue limit
BIOLM	10	Buffered I/O limit
BYTLM[1]	30,000	Buffered I/O byte count limit
DIOLM	10	Direct I/O limit
ENQLM	2000	Lock queue limit
FILLM	100	Open file limit
MAXDETACH[2]	0	Maximum number of detached processes
PGFLQUO	20,000	Paging file limit
PRCLM	1	Subprocess creation limit
WSEXTENT	2048	Working set extent
WSQUO	512	Working set quota

[1]Each DECdecision component run simultaneously uses 3000 of the total BYTLM. Setting BYTLM to 30,000 allows a user to run eight components at one time, with the remaining BYTLYM available for other processes. If a user wants to run more components at one time, increase BYTLM accordingly.

[2]Each DECdecision component runs as a detached process. A MAXDETACH of n allows n components to be run, or you can set it to 0 for an unlimited number.

To avoid running out of processes, you should maintain the default MAXDETACH process quota of 0 (that is, infinite). Because DECdecision retains application processes for re-use you could run out of processes unless an infinite number are available.

Use the VMS Authorize Utility to verify and change user account quotas. See Section 1.8.2 for more information.

3.4 Converting Your Databases

If the DECdecision installation procedure installed a new version of Run-Time Rdb/VMS on your system, you must use the Rdb/VMS Management Utility (RMU) to convert all existing DECdecision Access and Rdb/VMS databases to a format compatible with the Rdb/VMS Version 3.1 software. See Section 1.9.2 for information on how to locate all the databases on your system.

Users trying to access unconverted databases with Version 3.1 software will receive the following fatal error messages:

```
%RDB-F-WRONG_ODS, the on-disk structure of database filename is not supported
by version of facility being used
-RDMS-F-ROOTMAJVER, database format is not compatible with software version
%RDO-F-BACKCONV, Please backup your database and use the RMU/CONVERT command.
```

Use the RMU/CONVERT command to convert existing databases. Be sure that you have the SYSPRV privilege or that the RMUCONVERT.EXE image was installed with the SYSPRV privilege before you use the RMU/CONVERT command.

Use the following procedure to convert a DECdecision Access Rdb/VMS database:

1 Set default to the directory where the database resides. For example:

```
$ SET DEFAULT DISK1:[USER]
```

2 Enter the following DCL command:

```
$ RMU/CONVERT DECISION$ACCESS_DB.RDB
```

3 For existing databases, the RMU/CONVERT command displays a question about the backup of your database. For example:

```
Are you satisfied with your backup of DISK1:[USER]DECISION$ACCESS_DB.RDB;5? [N]?
```

If you have prepared your databases as instructed in Section 1.9, enter YES.

The RMU/CONVERT command can disable after-image journaling during the conversion. If the database to be converted has after-image journaling enabled, RMU prompts you to determine if you want after-image journaling disabled so that the conversion can continue. If you reply NO, the RMU/CONVERT operation fails and RMU responds with an error message telling you the database was not converted:

```
After-image journaling will be disabled if the RMU/CONVERT of
DISK1:[USER]DECISION$ACCESS_DB.RDB;5 continues. Do you wish to proceed [N]? N
%RMU-F-DB_NOTCVT, database not converted
%RMU-F-SEVERRDET, a severe error was detected
```

If you enter YES, RMU disables after-image journaling, converts the database, and then re-enables after-image journaling with an AIJ file of the same name and next higher version number:

```
After-image journaling will be disabled if the RMU/CONVERT of
DISK1:[USER]DECISION$ACCESS_DB.RDB;5 continues. Do you wish to proceed [N]? Y
%RMU-I-CVT_PROCEED, convert proceeding
%RDMS-I-LOGCREAIJ, created after-image journal file DISK2:[USER]DECISION$ACCESS_DB.AIJ;6
%RMU-S-DB-CVT-SCS, database successfully converted from version 3.0 to 3.1
```

If you have already disabled after-image journaling, this prompt does not appear.

The RMU/CONVERT command accepts the database file name you enter, updates all system relations, and creates new ones for Rdb/VMS Version 3.1. The command can convert databases created with Rdb/VMS Versions 3.0, 3.0-A, and 3.0-B.

Note *Once a database file is restructured to work with a higher version, you cannot use that database file with a previous version of Rdb/VMS.*

After you have answered the conversion questions and the conversion is complete, the RMU/CONVERT command returns you to DCL command level.

During the conversion process, you might encounter errors. For example:

- Because the default protection on a database root (RDB) file is (RWED,R,,), you might receive a NOPRIV fatal error during a conversion attempt. If this occurs, and you are the owner of the database file, change the file protection. For example:

  ```
  $  SET PROT=O:RW *.RDB
  ```

  Try the RMU/CONVERT command again. Users with SYSPRV or BYPASS privilege will not encounter this problem.

- If a different error occurs when you use the RMU/CONVERT command, restore the database (using the IMPORT statement) from the EXPORT version that was created before the installation (see Section 1.9.2). For example:

  ```
  $  RUN SYS$SYSTEM:RDO
  RDO>  IMPORT
  cont>  'DECISION$ACCESS_DB.RBR'
  cont>  INTO 'DECISION$ACCESS_DB.RDB'
  cont>  END IMPORT.
  RDO>  EXIT
  ```

After you have verified that a database conversion was successful and that the user can access the database properly, you can delete the RBR version of the database that you created in Section 1.9.2. The RBR file was necessary as a precaution in case the RMU/CONVERT procedure failed.

3.5 Rebooting the System

You are not required to reboot the system to activate DECdecision. However, you may choose to reboot your system after you have installed DECdecision, edited the system startup and shutdown files, and reset the system parameters (if necessary). A system reboot establishes any new parameter settings and verifies that DECdecision is ready for use and that the edits to the system startup command file are correct.

3.6 Running the Installation Verification Procedure Separately

If you answered YES to the IVP question during the DECdecision installation, the Installation Verification Procedure ran automatically at the end of the installation. You received a message indicating whether the IVP succeeded or failed.

You can also run the IVP separately. The account from which you run the IVP must have the same privileges and account quotas required to install DECdecision. See Section 1.8 for more information.

To run the IVP, use the following DCL command:

```
$ @SYS$TEST:DECISION$IVP
```

3.7 Running DECdecision

As part of the installation, DECdecision adds its name to the FileView Applications menu. You should inform all users after the installation that DECdecision is now available as an option on their FileView Applications menu.

Note *On clusters with a multiple system disk environment, the Applications menu is customized only for the disk or disks on which DECdecision is installed.*

Users may also enter the following commands at the DCL prompt to use DECdecision and its components:

Enter	To
INFORM	Run the Control component
INFORM/CALC	Run the Calc component
INFORM/ACCESS	Run the Access component
INFORM/CHART	Run the Chart component
INFORM/BUILDER	Run the Builder component

For a full list of the DECdecision DCL commands and qualifiers, see the *DECdecision Overview*, or enter the following DCL command:

```
$  HELP DECDECISION
```

3.8 Post-Installation Check List

Table 3–2 summarizes the tasks you must perform after installing DECdecision. Check to make sure that you have performed all these tasks before making DECdecision available to users.

Table 3–2 Post-Installation Check List

Task	For More Information
Edit system startup and shutdown files	See Section 3.1
Activate DECdecision on a VAXcluster	See Section 3.2
Check privileges and quotas of the user accounts	See Section 3.3
Convert your databases	See Section 3.4

4

Managing Your DECdecision Environment

This chapter gives suggestions for ways to best manage your DECdecision environment.

4.1 Performance Considerations

The major factors to consider when supporting many DECdecision users are physical memory size and system parameter settings.

Several process and system parameters can affect DECdecision performance. This section describes parameters that you can modify to improve performance. The following sections discuss these performance topics:

- Working set values
- Global pages and global sections
- System parameters

Note *The quotas suggested in the following sections are minimum values. If you frequently perform operations such as accessing large tables, joining large tables, or importing and exporting large amounts of data, larger quotas might be necessary to enhance performance.*

For additional information on VMS performance, see the *Guide to VMS Performance Management*.

For information on the parameters and quotas required to run VAX Rdb/VMS and for information on tuning your Rdb/VMS database system, see the *VAX Rdb/VMS Installation Guide* and the *VAX Rdb/VMS Guide to Database Maintenance and Performance*.

4.1.1 Working Set Values

DECdecision requires large user working sets to run optimally. As a result, you should consider setting the following process account parameters to the indicated values:

- WSDEFAULT = 512
- WSQUOTA = 1024
- WSEXTENT = 2048 to 4096

The SYSGEN parameter WSMAX must at least equal the largest value of any user's WSEXTENT account parameter. Specify a large value for WSEXTENT to minimize paging on the system.

4.1.2 Global Pages and Global Sections

When run locally (for example, as a standalone workstation or as a satellite node on a VAXcluster), each invocation of a DECdecision component requires 300 additional global pages and 1 global section. You should have sufficient unused global pages and global sections to allow for this.

In addition, DECdecision Access requires additional global pages and global sections at run time. This is due to the fact that Rdb/VMS allocates a certain amount of memory for each open database. The number of additional global pages and global sections required depends on the number of Access users.

To estimate the total number of unused global pages needed, calculate the sum of the following values:

1. The number of Access users, multiplied by 100
2. The number of unused global pages required to install DECdecision - 10,000
3. If you are running DECdecision locally, the maximum number of components that will be running simultaneously, multiplied by 300

To estimate the total number of unused global sections needed, calculate the sum of the following values:

1. The number of Access users, multiplied by 2
2. The number of unused global sections required to install DECdecision - 61
3. If you are running DECdecision locally, the maximum number of components that will be running simultaneously, multiplied by 1

For example, assume your workstation is a satellite node on a Local Area VAXcluster. DECdecision is installed on the boot node. You typically run the Access, Calc, and Chart components at the same time. Your workstation requires these minimum unused global page and global section values:

- Global pages
  - 1 Access user multiplied by 100 = 100
  - 10,000
  - 3 components running simultaneously multiplied by 300 = 900

  Total: 100 + 10,000 + 900 = 11,000
- Global sections
  - 1 Access user multiplied by 2 = 2
  - 61
  - 3 components running simultaneously multiplied by 1 = 3

  Total: 2 + 61 + 3 = 66

See Section 4.1.3 for more information about adjusting other system parameters to enhance performance. See Section 1.8.5 for information on the minimum parameter values required to run DECdecision.

4.1.3 System Parameters

Table 1–5 lists the minimum system parameter values required to install and use DECdecision. These values are satisfactory for a small number of active users. However, if there are many concurrent DECdecision users and many Rdb/VMS users, you might need to adjust some system parameters to obtain better performance. The recommended values for these system parameters are listed in Table 4–1. You can adjust these parameters independently by using the SYSGEN facility or by using the feedback mechanism of AUTOGEN.COM.

Table 4–1 System Parameter Tuning Suggestions

Parameter	Suggested Setting	Description
LOCKIDTBL	2048	Determines the total number of resources that can be locked on the system at one time.

(continued on next page)

Table 4–1 (Cont.) System Parameter Tuning Suggestions

Parameter	Suggested Setting	Description
RESHASHTBL	512	Defines the number of entries in the lock management resource name hash table. Set this value to one-fourth the value of LOCKIDTBL, rounded up to the closest power of 2.
SRPCOUNT SRPCOUNTV	2048 4096	These parameters control the number of small request packets. You should monitor the use of SRPs on the system using the DCL command SHOW MEMORY. If the size of the Small Packet (SRP) List "In Use" value is greater than the "Total" value, then you should set the value of SRPCOUNT to the greater value. This eliminates some process resource waits and decreases response time. SRPCOUNTV should be set to the value of LOCKIDTBL plus the previous value of SRPCOUNTV. The number of SRPs on the system can grow to the value of SRPCOUNTV.
IRPCOUNT IRPCOUNTV	256 1000	These parameters control the number of I/O request packets. You should use the DCL command SHOW MEMORY to monitor the use of IRPs on the system. If the size of the I/O Request Packet (IRP) List "In Use" value is greater than the "Total" value, then you should set the value of IRPCOUNT to the greater value. This eliminates some process resource waits and decreases response time. The number of IRPs on the system can grow to the value of IRPCOUNTV.
NPAGEDYN NPAGEVIR	See Description	NPAGEDYN sets the size of the nonpaged dynamic pool in bytes. This pool can grow dynamically to the limit set by NPAGEVIR. You should use the DCL command SHOW MEMORY to monitor the size of the nonpaged pool on the system. If the size of the Nonpaged Dynamic Memory "Total" value is greater than the value of NPAGEDYN, then you should set the value of NPAGEDYN to the greater value. This eliminates some process resource waits and decreases response time. The size of the nonpaged dynamic pool can grow to the value of NPAGEVIR.

4.2 Managing Access Files and Databases

DECdecision Access is built on Rdb/VMS, Digital's relational database management system. The next three sections provide specific information on the following Access database management topics:

- Managing Run Unit Journal (RUJ) files
- Using DECdecision with DATATRIEVE domains
- Granting database access to users on other systems

See Appendix B of the *DECdecision Access User's Guide* for valuable Access database management information in these areas:

- Access objects and logical names
- Migrating an Access database to another system
- Accessing large Rdb/VMS relations from within Access
- Giving users access to information
- Giving users access to data stored in IBM systems
- Protecting data

For more information about Rdb/VMS, see the *Rdb/VMS Guide to Database Administration*.

4.2.1 Managing Run Unit Journal Files

Rdb/VMS creates a journal file for each Access folder or table that a user opens. It is possible for Rdb/VMS to create and maintain more than one journal file simultaneously. These files are placed in the user's SYS$LOGIN directory and have the file name DECISION$ACCESS_DB.RUJ.

A user may have limits placed on the number of versions of a file that can exist in a directory. If the user has several Access entries open simultaneously, this version limit might be exceeded. As a result, the user will not be able to open additional tables. You can solve this problem by making sure that the user's SYS$LOGIN directory has a high file version limit. Digital recommends a value of at least five.

To change the version limit of a directory file, use the SET FILE command, as in the following example:

```
$  SET FILE DISK1:[000000]USER.DIR/VERSION_LIMIT=5
```

A version limit of zero means that there is no limit on the number of files.

If you do not want to increase the file version limit for the user's SYS$LOGIN directory, create a special subdirectory for the user's RUJ files. Then, set the file version limit on that directory and have the user define a job logical that points to that directory, as in the following example:

```
$  DEFINE/JOB RDMS$RUJ DISK1:[USER.RUJ]
```

4.2.2 Using DECdecision with DATATRIEVE Domains

To work with DATATRIEVE domains, DECdecision Access requires that either the file SYS$SHARE:DTRSHR.EXE exist on the system or that a logical name be defined to point to the appropriate DTR shareable image.

Some systems have multiple versions of DATATRIEVE running at the same time. On these systems, instead of DTRSHR.EXE, there might be files such as DTRSHRV4.EXE. In this case, you should place the following line in SYSTARTUP_V5.COM to make this choice permanent:

```
$  DEFINE/SYSTEM/EXEC DTRSHR SYS$SHARE:DTRSHRV4.EXE
```

If you change SYSTARTUP_V5.COM to include this line, DECdecision uses DTRSHRV4.EXE when Access users work with DATATRIEVE domains.

4.2.3 Granting Database Access to Users on Other Systems

If users on other systems are allowed to access databases stored on your system, the account associated with RDBSERVER must have at least the minimum quotas recommended for DECdecision user accounts. These quotas are listed in Table 3–1.

To find out which account is associated with RDBSERVER, log in to a privileged account such as SYSTEM, and enter the following commands:

```
$  RUN SYS$SYSTEM:NCP
NCP>  SHOW OBJECT RDBSERVER
```

NCP displays information about the account associated with RDBSERVER. If NCP does not display the information, then the DECnet account is the account used for remote access requests. In this case, the DECnet account should have the quotas listed in Table 3–1. Enter EXIT to leave NCP.

4.3 Assigning Print Formats to Print Queues

DECdecision uses the Print dialog box for sending files to a printer. DECdecision supports both PostScript and Text formats. When you select one of these formats in the Print Format list box, the Printer list box displays all printing devices on the system by default. However, you can define logical names to associate print queues with specific print formats such as PostScript and Text. Then when you choose the PostScript print format, for example, only the PostScript printer queues display in the Printer list box.

You can define system-wide printer format logical names by creating a DCL procedure that SYSTARTUP_V5.COM invokes during system startup. The following example makes logical name assignments for a system that has these print queues:

- Text queues - SYS$PRINT, LPS40_ANSI, LN03R_ANSI
- PostScript queues - LPS40_PS, LN03R_PS

```
$! DECW$PRINTERS.COM
$!
$ DEFINE/SYSTEM/EXEC DECW$PRINTER_FORMAT_TEXT "SYS$PRINT,LPS40_ANSI,LN03R_ANSI"
$ DEFINE/SYSTEM/EXEC DECW$PRINTER_FORMAT_PS "LPS40_PS,LN03R_PS"
$ EXIT
```

When you specify the print queue names, arrange them in order starting with the most frequently used printer first in the series. Then the most important queue will appear first in the print formats list box.

Individual users can also define printer format logical names in their LOGIN.COM files. This would be useful for a user who has an individual office printer that is not generally available to other users.

When you define the logical at the DCL level, you must use the /JOB qualifier to put the logical at the right level. See the VMS system management documentation for more information.

4.4 DECdecision Fatal Errors

If a DECdecision component encounters an unexpected problem or an internal fatal error, your session terminates. When this occurs, each of the components acts in the following manner:

- Access displays an error message and creates the dump file DECISION$ACCESS_BUGCHK.DMP.
- Calc creates the dump file DECISION$CALC_BUGCHK.DMP.
- DECchart displays an error message and creates the dump file DECCHART.DMP.
- Builder displays an error message and creates the dump file DECISION$BUILDER_BUGCHK.DMP.
- The Control Component creates the dump file DECISION$CTL_BUGCHK.DMP

The bugcheck dump file is placed in your SYS$SCRATCH directory.

If a bugcheck occurs, please submit to Digital a description of the problem, instructions on how to reproduce it, the associated data files (databases, spreadsheets, blueprints, and so on), and a copy of the bugcheck dump file.

A

Sample First-Time DECdecision Installation

This appendix shows a typical first-time installation of DECdecision on a VMS Version 5.3-1 system. In this example, DECdecision also installs Run-Time (RTO) Rdb/VMS Version 3.1A-0 and DECchart Version 1.1.

Table 1–6 summarizes the tasks you must perform before installing DECdecision. Check to make sure that you have completed all these tasks before proceeding with the installation.

```
        Welcome to node MYNODE

Username:  SYSTEM Return
Password:         Return

        Welcome to VAX/VMS version V5.3-1 on node MYNODE

    Last interactive login on Thursday,  04-JAN-1990 08:32
    Last non-interactive login on Wednesday, 03-JAN-1990 12:32

 $  REPLY/USER "Installation starting in 5 minutes. Please log out." Return
 $  SET LOGINS/INTERACTIVE=0 Return
 $  @SYS$UPDATE:VMSINSTAL DECISION011 MUA0: OPTIONS N Return

        VAX/VMS Software Product Installation Procedure V5.3-1

It is 05-JAN-1990 at 09:17.

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

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

Please mount the first volume of the set on MUA0:.
* Are you ready?  YES Return

%MOUNT-I-MOUNTED, DECIS mounted on _MUA0:

The following products will be processed:
  DECISION V1.1

        Beginning installation of DECISION V1.1 at 09:18

%VMSINSTAL-I-RESTORE, Restoring product save set 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 Return

* Queue name [SYS$PRINT]: Return
Job 810 (queue SYS$PRINT, entry 1295) started on SYS$PRINT

* Do you want to continue the installation [NO]?  YES Return

%VMSINSTAL-I-RELMOVED , The product's release notes have been
successfully moved to SYS$HELP.

   ************************************************************
   *                                                          *
   *                   DECdecision V1.1                       *
   *          Integrated Decision Support Package             *
   *                                                          *
   *                Installation Procedure                    *
   *                                                          *
   ************************************************************

         Product:      DECDECISION-USER
         Producer:     DEC
         Version:      1.1
         Release Date: 2-APR-1990

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

  Checking user parameters
  Checking system parameters
  Testing dependent product versions

%VMSINSTAL-I-RESTORE, Restoring product save set B ...
%VMSINSTAL-I-RESTORE, Restoring product save set C ...

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

This kit requires DECchart V1.1 or later

DECchart V1.1 will be installed since an earlier version
exists on your system.

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

The DECdecision product creates a tree of library directories.
A subdirectory is created for each component.
* Where would you like to place the DECISION V1.1 library root
[SYS$SYSCOMMON:[DECISION]]:  Return
```

```
%VMSINSTAL-I-SYSDIR, This product creates system disk directory
VMI$ROOT:[DECISION].
%VMSINSTAL-I-SYSDIR, This product creates system disk directory
VMI$ROOT:[DECISION.BUILDER].
%VMSINSTAL-I-SYSDIR, This product creates system disk directory
VMI$ROOT:[DECISION.ECALC].
%VMSINSTAL-I-SYSDIR, This product creates system disk directory
VMI$ROOT:[DECISION.ACCESS].
%VMSINSTAL-I-SYSDIR, This product creates system disk directory
VMI$ROOT:[SYSTEST.DECISION$IVP].

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

    This installation requires the creation of the RDB$REMOTE
    account.  You MUST choose a UIC and password for this
    account.  PLEASE NOTE that your password for the RDB$REMOTE
    account and the network object RDBSERVER MUST be exactly the
    same.  The password you supply for the RDB$REMOTE account
    will be used for the network object as well IF the account is
    created by this installation.

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


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

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

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

* Enter UIC to be used for RDB$REMOTE account (e.g. [300,2]):
 [200,250] Return

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

    The entire installation will FAIL if you do not enter a valid
    password for the RDB$REMOTE account.  You will be given
    3 chances to verify your password.  This installation
    procedure requires at least 6 characters for the
    RDB$REMOTE 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 RDB$REMOTE account:  X2B6T3N4 Return

* Please verify the PASSWORD entered for RDB$REMOTE:  X2B6T3N4 Return
```

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

    The DECdecision IVP requires that a display device be defined (using
    the SET DISPLAY command). Please enter the node name of the
    workstation on which to display the IVP.

*    Enter node name (or Return to not run IVP):  MYNODE Return

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

    To complete the installation on a standalone VAX 11/780
    will take approximately:

        1 hour and 5 minutes to install
        16 minutes to run the IVP

    All required questions have been asked.
    You can terminate the installation procedure at this time.

* Do you want to continue the installation [YES]?  Return

%VMSINSTAL-I-RESTORE, Restoring product save set D ...
%VMSINSTAL-I-RESTORE, Restoring product save set E ...
%VMSINSTAL-I-RESTORE, Restoring product save set F ...
%VMSINSTAL-I-RESTORE, Restoring product save set G ...
%VMSINSTAL-I-RESTORE, Restoring product save set H ...
  ***************************************************************************

   SYSTEM MANAGER


  The following command lines MUST be added to the system startup
  command file SYS$MANAGER:SYSTARTUP_V5.COM for all nodes that will
  be running DECdecision

        $ @SYS$STARTUP:DECISION$STARTUP.COM

  The following command lines should be added to the system
  shutdown command file SYS$MANAGER:SYSHUTDWN.COM for all nodes
  that will be running DECdecision

        $ @SYS$MANAGER:DECISION$SHUTDOWN.COM

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

%VMSINSTAL-I-SYSDIR, This product creates system disk directory
VMI$ROOT:[RDB$REMOTE].
%DECISION-I-ACCOUNT, This installation creates an account named RDB$REMOTE.

RDBSERVER has been placed in the DECnet object database as number 35.

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

    SYSTEM MANAGER:

    If your DECnet object database is not configured to be in
    the cluster common directory, then you will need to perform
    the following:

    In order to have remote access on another node which shares
    this cluster common root directory, you must insert
    RDBSERVER.EXE into that node's DECnet object database by:
```

```
        a) Logging into that node, and
        b) Invoking SYS$COMMON:[SYSMGR]RDBSERVER_NCP.COM.

    This command procedure inserts RDBSERVER into the node's
    permanent DECnet object database.  This procedure only needs
    to be executed ONCE per node.

    This command procedure will prompt for a password for
    the object RDBSERVER. This password must match the
    password established for the account.

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

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

    The RDBSERVER object automatically uses the RDB$REMOTE
    account created by this installation procedure.

    Invoking a database should look like:

    $DEFINE MYDB "<node>::<dev>:<dir><db-name>"
    $RDO
    RDO> DATABASE FILE MYDB

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

%VMSINSTAL-I-SYSDIR, This product creates system disk directory
VMI$ROOT:[SYSHLP.EXAMPLES.RDBVMS].
%VMSINSTAL-I-SYSDIR, This product creates system disk directory
VMI$ROOT:[SYSTEST.RDBVMS].

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

    The Rdb/VMS Installation Verification Procedure (IVP) has
    been provided in SYS$COMMON:[SYSTEST].

    It is invoked using the commands:

        $ SET DEFAULT SYS$COMMON:[SYSTEST]
        $ @RDBIVP RTO

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

%VMSINSTAL-I-SYSDIR, This product creates system disk directory
VMI$ROOT:[SYSMGR.VAXINFO$PRODUCTS].
%VMSINSTAL-I-SYSDIR, This product creates system disk directory
VMI$ROOT:[SYSTEST.CHART$IVP].
%VMSINSTAL-I-SYSDIR, This product creates system disk directory
VMI$ROOT:[SYSHLP.EXAMPLES.DECCHART].

%VMSINSTAL-I-MOVEFILES, Files will now be moved to their target directories...
Rdb/VMS monitor (RDMS_MONITOR) started

SQL: Assigning System-wide SQL Logicals
```

```
    ********************************************************************
    *                                                                  *
    *   Installing Sample Database...                                  *
    *                                                                  *
    ********************************************************************
    *                                                                  *
    *   Installing Default User Database...                            *
    *                                                                  *
    ********************************************************************
    *                                                                  *
    *   Installing Public Folder Database...                           *
    *                                                                  *
    ********************************************************************

Executing IVP for: DECdecision V1.1

    The IVP runs a Builder BLUEPRINT which will run each component and
    produce intermediate reports and a final chart of the results.
    The reports and chart are compared with the expected values to determine
    if the IVP has completed successfully.

    Starting DECdecision...

Comparing the results of the BLUEPRINT with the expected results

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

        DECdecision V1.1

        IVP COMPLETED SUCCESSFULLY

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

IVP completed for: DECdecision V1.1

Executing IVP for: VAX Rdb/VMS Version 3.1A-0

Restoring the test database.

Running RDO tests
    Test completed successfully

Running the after-image journaling test.
    Test completed successfully

Running the interpreter test.
    Test completed successfully

Running the SQL/Services tests.
        You must have proxy enabled to run the sql services ivp program.
        See the Rdb/VMS installation guide for more information.
        All of the sql services files are in their proper directories.

SQL/Services tests completed successfully.

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

    VAX Rdb/VMS V3.1A-0

    Run-Time Only

    IVP COMPLETED SUCCESSFULLY
```

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

IVP completed for: VAX Rdb/VMS V3.1A-0

        Installation of DECISION V1.1 completed at 10:30

        VMSINSTAL procedure done at 10:31

$ SET LOGINS/INTERACTIVE=64
$ REPLY/USER "Installation complete. System is ready for use."
```

Table 3–2 summarizes the tasks you must perform after installing DECdecision. Check to make sure that you have completed all these tasks before making DECdecision available to users.

B

Sample DECdecision Upgrade from Version 1.0

This appendix shows a typical upgrade of DECdecision from Version 1.0 to Version 1.1 on a VMS Version 5.3-1 system. In this example, DECdecision also upgrades to Run-Time (RTO) Rdb/VMS Version 3.1A-0 and DECchart Version 1.1.

Table 1–6 summarizes the tasks you must perform before installing DECdecision. Check to make sure that you have completed all these tasks before proceeding with the installation.

```
        Welcome to node MYNODE

Username:  SYSTEM Return
Password:         Return

        Welcome to VAX/VMS version V5.3-1 on node MYNODE

    Last interactive login on Thursday,  04-JAN-1990 08:32
    Last non-interactive login on Wednesday, 03-JAN-1990 12:32

 $  REPLY/USER "Installation starting in 5 minutes. Please log out." Return
 $  SET LOGINS/INTERACTIVE=0 Return
 $  @SYS$UPDATE:VMSINSTAL DECISION011 MUA0: OPTIONS N Return

        VAX/VMS Software Product Installation Procedure V5.3-1

It is 05-JAN-1990 at 09:17.

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

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

Please mount the first volume of the set on MUA0:.
* Are you ready?  YES Return

%MOUNT-I-MOUNTED, DECIS mounted on _MUA0:

The following products will be processed:
  DECISION V1.1
```

```
        Beginning installation of DECISION V1.1 at 09:18

%VMSINSTAL-I-RESTORE, Restoring product save set 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 Return

* Queue name [SYS$PRINT]:  Return
Job 810 (queue SYS$PRINT, entry 1295) started on SYS$PRINT

* Do you want to continue the installation [NO]?  YES Return

%VMSINSTAL-I-RELMOVED , The product's release notes have been
successfully moved to SYS$HELP.

   ************************************************************
   *                                                          *
   *                   DECdecision V1.1                       *
   *          Integrated Decision Support Package             *
   *                                                          *
   *                Installation Procedure                    *
   *                                                          *
   ************************************************************

         Product:      DECDECISION-USER
         Producer:     DEC
         Version:      1.1
         Release Date: 2-APR-1990

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

  Checking user parameters
  Checking system parameters
  Testing dependent product versions

%VMSINSTAL-I-RESTORE, Restoring product save set B ...
%VMSINSTAL-I-RESTORE, Restoring product save set C ...

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

   This kit requires Rdb/VMS Version 3.1A-0 RTO or later.

   Rdb/VMS Version 3.1A-0 RTO will be installed since an earlier version
   exists on your system.

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

* Do you want to proceed [YES]? Return

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

             Before You Install Rdb/VMS Software
```

```
    The on-disk structure of Rdb/VMS database files has changed.
    As a result, databases created under previous versions of
    Rdb/VMS are incompatible with this software.
    To use this software with a current Rdb/VMS database
    perform the following tasks:

    o Before installing VAX Rdb/VMS V3.1A-0:

      - Export each database, including any CDD/Plus dictionaries,
        with your currently installed version of Rdb/VMS using the
        using the RDO EXPORT statement. The export MUST be
        performed using currently installed software.

      - As a precaution, backup each database with the VMS Backup
        Utility.

    o After installing VAX Rdb/VMS V3.1A-0:

      - For any databases, including CDD/Plus dictionaries,
        created with a version of Rdb/VMS software earlier
        than V3.1A-0, use RMU/CONVERT.

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

* Did you export your current databases [NO]: YES Return

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

   This kit requires DECchart V1.1 or later

   DECchart V1.1 will be installed since an earlier version
   exists on your system.

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

* Do you want to proceed [YES]? Return

The directory DECISION$LIBRARY currently exists on your system.
* Would you like to place the DECISION V1.1 library root there [YES]?
  Return

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

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

    DECdecision has a default database.
    This is copied to new user's accounts when they first use
    DECdecision.

    This database is installed in DECISION$ACCESS_LIBRARY

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

Your system has a default user database.
* Do you want to replace it [NO]?  Return

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

    The DECdecision IVP requires that a display device be defined (using
    the SET DISPLAY command). Please enter the node name of the
    workstation on which to display the IVP.
```

```
*     Enter node name (or Return to not run IVP):  MYNODE [Return]

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

    To complete the installation on a standalone VAX 11/780
    will take approximately:

        1 hour and 5 minutes to install
        16 minutes to run the IVP

    All required questions have been asked.
    You can terminate the installation procedure at this time.

* Do you want to continue the installation [YES]?  [Return]

%VMSINSTAL-I-RESTORE, Restoring product save set D ...
%VMSINSTAL-I-RESTORE, Restoring product save set E ...
%VMSINSTAL-I-RESTORE, Restoring product save set F ...
%VMSINSTAL-I-RESTORE, Restoring product save set G ...
%VMSINSTAL-I-RESTORE, Restoring product save set H ...

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

   SYSTEM MANAGER

  The following command lines MUST be added to the system startup
  command file SYS$MANAGER:SYSTARTUP_V5.COM for all nodes that will
  be running DECdecision

        $ @SYS$STARTUP:DECISION$STARTUP.COM

  The following command lines should be added to the system
  shutdown command file SYS$MANAGER:SYSHUTDWN.COM for all nodes
  that will be running DECdecision

        $ @SYS$MANAGER:DECISION$SHUTDOWN.COM

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

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

    The qualifier LGICMD for the RDB$REMOTE account in SYSUAF
    is modified by this installation.

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

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

    The RDBSERVER object automatically uses the RDB$REMOTE
    account created by this installation procedure.

    Invoking a database should look like:

    $DEFINE MYDB "<node>::<dev>:<dir><db-name>"
    $RDO
    RDO> DATABASE FILE MYDB

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

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

```
    The Rdb/VMS Installation Verification Procedure (IVP) has
    been provided in SYS$COMMON:[SYSTEST].

    It is invoked using the commands:

        $ SET DEFAULT SYS$COMMON:[SYSTEST]
        $ @RDBIVP RTO

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

%VMSINSTAL-I-SYSDIR, This product creates system disk directory
VMI$ROOT:[SYSTEST.CHART$IVP].
%CREATE-I-EXISTS, VMI$ROOT:[SYSTEST.CHART$IVP] already exists
%VMSINSTAL-I-SYSDIR, This product creates system disk directory
VMI$ROOT:[SYSHLP.EXAMPLES.DECCHART].
%CREATE-I-EXISTS, VMI$ROOT:[SYSTEST.EXAMPLES.DECCHART] already exists
Deleting obsolete files

%VMSINSTAL-I-MOVEFILES, Files will now be moved to their target directories...
Rdb/VMS monitor (RDMS_MONITOR) started
SQL: Assigning System-wide SQL Logicals

    *********************************************************************
    *                                                                   *
    *   Installing Sample Database...                                   *
    *                                                                   *
    *********************************************************************

Executing IVP for: DECdecision V1.1

    The IVP runs a Builder BLUEPRINT which will run each component and
    produce intermediate reports and a final chart of the results.
    The reports and chart are compared with the expected values to determine
    if the IVP has completed successfully.

    Starting DECdecision...

Comparing the results of the BLUEPRINT with the expected results

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

        DECdecision V1.1

        IVP COMPLETED SUCCESSFULLY

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

IVP completed for: DECdecision V1.1

Executing IVP for: VAX Rdb/VMS V3.1A-0

Restoring the test database.

Running RDO tests
    Test completed successfully

Running the after-image journaling test.
    Test completed successfully

Running the interpreter test.
    Test completed successfully
```

```
Running the SQL/Services tests.
        You must have proxy enabled to run the sql services ivp program.
        See the Rdb/VMS installation guide for more information.
        All of the sql services files are in their proper directories.

 SQL/Services tests completed successfully.
    **************************************

    VAX Rdb/VMS V3.1A-0

    Run-Time Only

    IVP COMPLETED SUCCESSFULLY

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

IVP completed for: VAX Rdb/VMS V3.1A-0

        Installation of DECISION V1.1 completed at 10:30

        VMSINSTAL procedure done at 10:31

$ SET LOGINS/INTERACTIVE=64
$ REPLY/USER "Installation complete. System is ready for use."
```

Table 3–2 summarizes the tasks you must perform after installing DECdecision. Check to make sure that you have completed all these tasks before making DECdecision available to users.

C

DECdecision Files

This appendix lists all the files that are transferred to your system during a first time DECdecision installation in which Run-Time Rdb/VMS Version 3.1A-0 and DECchart Version 1.1 are installed.

The files are organized by directory. The file name and approximate file size in blocks are listed for each file.

In DECW$SYSTEM_DEFAULTS:

```
CHART_UID.UID                    2120
DECISION$ACCESS_UID.UID          1248
DECISION$BUILDER_UID.UID          368
DECISION$CT_UID.UID               312
DECISION$DEFAULTS.DAT               2
DECISION$ESP_UID.UID              648
DECISION$EVE_UID.UID              272
ECALC.DAT                           5
WRITE$IPSDEF.UID                  512
WRITE$IUPDEF.UID                   32
WRITE$PRINT_UI_DWV2.UID           184
```

In SYS$STARTUP:

```
DECISION$STARTUP.COM               10
RMONSTART.COM                       6
SQL$STARTUP.COM                    10
```

In SYS$SYSTEM:

DECCHART.EXE	1544
DECISION$ACCESS.EXE	1796
DECISION$BUILDER.EXE	685
DECISION$CT.EXE	120
DECISION$ECALC.EXE	7
RDB$REMOTE_LOGIN.COM	4
RDBSERVER.COM	1
RDBSERVER.EXE	27
RDMDBR.EXE	350
RDMMON.EXE	128
RDO.EXE	732
RMU.EXE	1032
RMUCLD.CLD	47
RMUCONVERT.EXE	2600
SQLSRV$.EXE	162

In SYS$HELP:

CHART$HELP.HLB	235
DECISION$ACCESS_HELP.HLB	424
DECISION$BUILDER_HELP.HLB	286
DECISION$CT_HELP.HLB	93
DECISION$ESP_HELP.HLB	751
DECISION011.RELEASE_NOTES	250
RDBHELP.HLP	16
RDB_MSG.DOC	222
RDMS_MSG.DOC	194
RDOHELP.HLB	1478
RDO_MSG.DOC	280
RMUDISPLAY.HLB	93
RMUHELP.HLP	631
RMU_MSG.DOC	288
SQL$DCLHELP.HLP	21
SQL$HELP.HLB	952
SQL$HELP_OLD.HLB	922
SQL$MSG.DOC	419
SQLSRVMSG.DOC	12
TCV_CONVERT_MESSAGES.MEM	205

In SYS$COMMON:[SYSHLP.EXAMPLES.DECCHART]:

CHART$SAMPLE.CHART	47
CHART$SAMPLE.CHART_STYLE	16
CHART$SAMPLE.TABLE	2

In SYS$COMMON:[SYSHLP.EXAMPLES.RDBVMS]:

DEMOFILES.DAT	1
RDBDEMO.COM	127

In SYS$LIBRARY:

```
DECISION$ACCESS_LAN_SHR.EXE          25
DECISION$BUILDER_GOBE_SHR.EXE       446
DECISION$BUILDER_SHR.EXE            143
DECISION$ESP_SECTION.TPU$SECTION  2117
DTIF$READ_ASCII_TABULAR.EXE         134
DTIF$READ_CALCGRD.EXE               132
DTIF$READ_DIF.EXE                   106
DTIF$READ_WK1.EXE                   110
DTIF$WRITE_ASCII_TABULAR.EXE        128
DTIF$WRITE_WK1.EXE                  191
ECALC$GRID_SHR.EXE                  805
ECALC$TABLEWGT_SHR.EXE               98
ECALC$TPU_SHR.EXE                   926
EPC$SHR.EXE                          17
RDBINTSHR.EXE                       837
RDBSHR.EXE                           86
RDBVMSLIB.OLB                        53
RDBVMS_DEFVER.COM                     8
RDBVMS_SETVER.COM                     8
RDBVMS_SHOVER.COM                     1
RDMLRTL.OLB                          72
RDMMSGSHR.EXE                        30
RDMPRV.EXE                           22
RDMSHR.EXE                           27
RDMSHRP.EXE                        1814
SQL$DYN.OPT                           1
SQL$INT.EXE                         849
SQL$USER.OLB                        321
SQLSRV$MOD.EXE                       16
TPU$EXT_TABLEWGT.EXE                 13
WRITE$AIL_SHR.EXE                    43
WRITE$PRINTWGTSHR.EXE               161
```

In SYS$MANAGER:

```
DECISION$SHUTDOWN.COM               6
RDBSERVER_NCP.COM                   1
RMONSTOP.COM                        5
VAXINFO$NETOBJ_INSERT.COM          14
```

In SYS$COMMON:[SYSMGR.VAXINFO$PRODUCTS]:

```
RDBVMS031_FILES.DAT                12
```

In SYS$MESSAGE:

ECALC$MESSAGES.EXE	180
EPC$MSG.EXE	38
RDBBMSGS.EXE	15
RDBMSGS.EXE	15
RDMSMSG.EXE	77
RDOMSG.EXE	110
RMUMSG.EXE	135
SQL$MSG.EXE	186
SQLSRV$MSG.EXE	6
VIDA_MESSAGE.EXE	33

In CDA$LIBRARY:

CH_AREA100.CHART_STYLE	13
CH_AREAGRID.CHART_STYLE	13
CH_AREASIMPLE.CHART_STYLE	13
CH_AREA_COL.CHART_STYLE	13
CH_BAR100.CHART_STYLE	13
CH_BARCLUSTER.CHART_STYLE	13
CH_BARCLUSTERGRID.CHART_STYLE	13
CH_BARCLUSTERVALUE.CHART_STYLE	13
CH_BAROVERLAP.CHART_STYLE	13
CH_BARSTACK.CHART_STYLE	13
CH_COL100.CHART_STYLE	13
CH_COLCLUSTER.CHART_STYLE	13
CH_COLCLUSTERGRID.CHART_STYLE	13
CH_COLCLUSTERVALUE.CHART_STYLE	13
CH_COLOVERLAP.CHART_STYLE	13
CH_COLSTACK.CHART_STYLE	13
CH_COL_HILO.CHART_STYLE	13
CH_COL_LINE.CHART_STYLE	13
CH_COL_SCAT.CHART_STYLE	13
CH_HILO.CHART_STYLE	13
CH_HILOCLOSE.CHART_STYLE	13
CH_HILOOPCL.CHART_STYLE	13
CH_HILOOPEN.CHART_STYLE	13
CH_HILO_LINE.CHART_STYLE	13
CH_HISTO.CHART_STYLE	13
CH_HISTOHGRID.CHART_STYLE	13
CH_HISTOHVGRID.CHART_STYLE	13
CH_HISTOVALUE.CHART_STYLE	13
CH_LINE.CHART_STYLE	13
CH_LINEHGRID.CHART_STYLE	13
CH_LINEHVGRID.CHART_STYLE	13
CH_LINELOG.CHART_STYLE	13
CH_LINEMARKERS.CHART_STYLE	13
CH_LINE_LINE.CHART_STYLE	13
CH_LINE_SCAT.CHART_STYLE	13
CH_PIE.CHART_STYLE	13
CH_PIEALLEXP.CHART_STYLE	13
CH_PIEONEEXP.CHART_STYLE	13
CH_PIEVALUE.CHART_STYLE	13
CH_SCATTER.CHART_STYLE	13
CH_SCATTERDEPLOG.CHART_STYLE	13
CH_SCATTERHVGRID.CHART_STYLE	13

```
CH_SCATTERLINES.CHART_STYLE        13
CH_SCATTERXYLOG.CHART_STYLE        13
```

In DECISION$LIBRARY:

```
ACCESS.DIR                          1
BUILDER.DIR                         1
ECALC.DIR                           1
```

In DECISION$ACCESS_LIBRARY:

```
DECISION$ACCESS_CREDB.COM           5
DECISION$ACCESS_DEFDB.RBR          29
DECISION$ACCESS_DEFDB.RDB        1050
DECISION$ACCESS_DEFDB.SNP         202
DECISION$ACCESS_SAMPLE.RBR         91
DECISION$ACCESS_SAMPLE.RDB       1282
DECISION$ACCESS_SAMPLE.SNP        202
DECISION$ACCESS_SYSDB.RDB        2578
DECISION$ACCESS_SYSDB.RBR          46
DECISION$ACCESS_SYSDB.SNP         394
DECISION$ACCESS_SYSDB_NEW.RBR      46
```

In DECISION$BUILDER_LIBRARY:

```
DECISION$BUDGET_SUMMARY.BLUEPRINT   7
DECISION$BUILDER_SYSTB.DAT          3
DECISION$BUILDER_SYSTBX.DAT         3
DECISION$TUTORIAL.BLUEPRINT        14
```

In DECISION$ECALC_LIBRARY:

```
DECISION$INTEREST_TABLE.TABLE      57
DECISION$MACRO_EXAMPLE.TPU         14
DECISION$YEARLY_REV.TABLE           6
```

In SYS$TEST:

```
CHART.DIR                           1
CHART$IVP.COM                       7
CHART$IVP.DIR                       1
DECISION$IVP.COM                    9
DECISION$IVP.DIR                    2
RDBIVP.COM                          6
RDBVMS.DIR                          7
```

In SYS$COMMON:[SYSTEST.CHART$IVP]:

```
CHART$IDENT.COM                     2
```

In SYS$COMMON:[SYSTEST.DECISION$IVP]:

```
DECISION$ACCESS_REPORT.DDIF         7
DECISION$CALC_REPORT.DDIF           3
DECISION$CHART_RESULTS.CHART       70
DECISION$COMPARE_FILES.COM          5
DECISION$IVP.BLUEPRINT             23
```

In SYS$COMMON:[SYSTEST.RDBVMS]:

INTERPDB.RBR	1
IVPCLEAN.COM	3
IVPRTOLIS.ANS	59
RDBINTERP.OBJ	3
RDBIVPAIJ.RBR	1
RDBIVPAIJ.TST	12
RDBIVPINT.ANS	1
RDBIVPINT.TST	4
RDBREMIVP.COM	2
RDBRTOIVP.COM	12
RTOPERS.RBR	1
SQL$IVP.ANS;1	2
SQL$IVP.COM;1	17
SQL$IVP.SQL;1	2
SQL$IVPADA.ANS;1	1
SQL$IVPADA.SQLADA;1	3
SQL$IVPADA.TST;1	5
SQL$IVPC.ANS;1	1
SQL$IVPC.SC;1	2
SQL$IVPC.TST;1	4
SQL$IVPCLEAN.COM;1	3
SQL$IVPCOB.ANS;1	2
SQL$IVPCOB.SCO;1	3
SQL$IVPCOB.TST;1	4
SQL$IVPDB.COM;1	3
SQL$IVPDEPTS.DAT;1	3
SQL$IVPDEPTS.EXE;1	14
SQL$IVPDYN.ANS;1	1
SQL$IVPDYN.EXE;1	17
SQL$IVPDYN.TST;1	4
SQL$IVPEMP.DAT;1	4
SQL$IVPEMP.EXE;1	17
SQL$IVPFOR.ANS;1	1
SQL$IVPFOR.SFO;1	2
SQL$IVPFOR.TST;1	4
SQL$IVPINDEX.SQL;1	2
SQL$IVPJOBS.DAT;1	2
SQL$IVPJOBS.EXE;1	14
SQL$IVPMOD.ANS;1	1
SQL$IVPMOD.SQLMOD;1	3
SQL$IVPMOD.TST;1	4
SQL$IVPMOD_HOST.BAS;1	8
SQL$IVPMOD_HOST.OBJ;1	6
SQL$IVPPLI.ANS;1	1
SQL$IVPPLI.SPL;1	2
SQL$IVPPLI.TST;1	4
SQL$IVPSQL.ANS;1	1
SQL$IVPSQL.TST;1	3
SQLSRV$IVP.COM;1	27
SQLSRV$IVP.EXE;1	188
SQLSRV$IVP.OBJ;1	9

In SYS$COMMON:[VUE$LIBRARY.USER]:

```
CHART$VUE.COM                       1
CHART$VUE_PROFILE.VUE$DAT          16
DECISION$VUE.COM                    4
DECISION$VUE_PROFILE.VUE$DAT       15
```

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