IEZ11 Software Installation Guide

Order Number: AA-PA9DA-TE

February 1990

Revision/Update Information: This is a new guide.

digital equipment corporation
galway, ireland

February 1990

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

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

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

© Digital Equipment Corporation 1990.

All Rights Reserved.
Printed in Ireland.

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

The following are trademarks of Digital Equipment Corporation:

ALL–IN–1	EduSystem	RT
DEC	IAS	ULTRIX
DEC/CMS	MASSBUS	UNIBUS
DEC/MMS	PDP	VAX
DECnet	PDT	VAXcluster
DECmate	P/OS	VMS
DECsystem–10	Professional	VT
DECSYSTEM–20	Q–bus	Work Processor
DECUS	Rainbow	
DECwriter	RSTS	digital™
DIBOL	RSX	

FCC NOTICE: The equipment described in this manual generates, uses, and may emit radio frequency energy. The equipment has been type tested and found to comply with the limits for a Class A computing device pursuant to Subpart J of Part 15 of FCC Rules, which are designed to provide reasonable protection against such radio frequency interference when operated in a commercial environment. Operation of this equipment in a residential area may cause interference, in which case the user at his own expense may be required to take measures to correct the interference.

Contents

Preface v

Chapter 1 Preparing to Install the IEZ11 Software

1.1 Prerequisite Hardware 1–1

1.2 Prerequisite and Optional Software 1–2

1.3 License Registration 1–2

1.4 VAXcluster Considerations 1–3

1.5 Installation Procedure Requirements 1–3
1.5.1 Time 1–3
1.5.2 Privileges 1–3
1.5.3 Disk Space 1–3
1.5.4 VMSINSTAL Requirements 1–4
1.5.5 Backing Up Your System Disk 1–5

Chapter 2 Installing the IEZ11 Software

2.1 General Information 2–1
2.1.1 Accessing the Online Release Notes 2–1
2.1.2 Files Added to the System 2–2
2.1.3 Running the Installation Verification Procedure (IVP) 2–6
2.1.4 Aborting the Installation 2–6

2.2 The Installation Procedure 2–6
2.2.1 Invoking VMSINSTAL 2–7
2.2.2 Installation Questions 2–7
2.2.3 Informational Messages 2–11
2.2.4 Running the Installation Verification Procedure 2–11
2.2.5 Completing the Installation Procedure 2–12

2.3 Error Recovery 2–12

Chapter 3 After Installing the IEZ11 Software

3.1 Editing the System Startup File 3–1

3.2 VAXcluster Considerations 3–1

3.3 Determining and Reporting Problems 3–2

Appendix A Sample Installation

Tables

1–1 Nomenclature 1–1

1–2 Disk Space Requirements 1–4

2–1 Files Provided by the IEZ11 Software Installation 2–2

2–2 Macro-32 Example Programs Provided in SYS$SYSHELP:[EXAMPLES.IEZ11] 2–2

2–3 VAX C Example Programs Provided in SYS$SYSHELP:[EXAMPLES.IEZ11] 2–4

Preface

Purpose of This Guide

This guide describes how to install the IEZ11 software, and how to run the Installation Verification Procedure. For the software installation to succeed, you must first install the SCSI488/D. See the *IEZ11 Hardware Installation Guide* for information on how to install the hardware.

This guide is for Version 1.0 of the IEZ11 Class Driver and all subsequent maintenance releases up to the next major version release.

Structure of This Guide

This guide has three chapters and one appendix:

- Chapter 1 describes how to prepare for the IEZ11 software installation.
- Chapter 2 describes how to install the IEZ11 software.
- Chapter 3 describes post-installation considerations.
- Appendix A contains a sample installation.

Associated Documents

This guide has the following associated documents:

- *IEZ11 Hardware Installation Guide* (AA-PA9EA-TE)
- *IEZ11 User's Guide* (AA-NU45A-TE)
- *System Support Addendum (SSA) for the DEC IEZ11 Class Driver for VMS, Version 1.0* (SSA: 31.41.xx) (AE-NU47A-TE)

Conventions

This guide uses the following conventions:

Convention	Meaning
NOTE	Indicates important information you must be aware of.
SHOW QUEUE	Command names in text are shown in uppercase.
CTRL/C	For sequences that use the CTRL key, hold down CTRL and press the second key.
`VSmv_RES_Svec`	System displays used as examples are shown in monospace type.

Chapter 1

Preparing to Install the IEZ11 Software

This chapter describes the preparations and requirements for installing the IEZ11 software. Table 1–1 explains the naming convention used throughout this guide.

Table 1–1: Nomenclature

Name	Refers to:
IEZ11	The complete bus converter
IEEE488 Bus Converter	The complete bus converter
SCSI488/D	The IEZ11 hardware device
IEZ11 Software	The complete IEZ11 software kit
IEZ11 Class Driver for VMS	The IEZ11 software driver

NOTE

The IEEE488 Bus Converter is the official name of the complete hardware and software package. IEZ11 is the catalogue reference name for the complete package.

Your bill of materials (BOM) and indented bills report (BIL) specify the number and contents of your media. Be sure to verify the contents of your kit with this information. If your kit is damaged, or if you find that parts of it are missing, contact your Digital representative.

The IEZ11 software provides online release notes. Digital strongly recommends that you read the release notes before proceeding with the installation. See Section 2.1.1 for information on accessing the online release notes.

1.1 Prerequisite Hardware

You can use the IEZ11 Class Driver only on those supported systems, which have a SCSI488/D connected to the external SCSI port. For a list of all VAX family supported systems, see the Hardware Requirements section of the *System Support Addendum (SSA)* to the *IEZ11 Software Product Description (SPD)*.

In a VAXcluster environment, you can install the IEZ11 software from any node in the cluster. See Section 1.4 for more details.

1.2 Prerequisite and Optional Software

The IEZ11 Class Driver requires the SCSI Port Driver in order to operate. This driver is part of the VAX/VMS operating system. The port driver is distributed with the regular VMS distribution kit, Version 5.1B and higher. During the system startup procedure, if the required system hardware is detected, SYSGEN automatically loads the driver. No user intervention is required.

The IEZ11 Class Driver requires at least version V5.3 of the VAX/VMS operating system. For a more detailed description of which version of VMS is compatible with the IEZ11 Class Driver, see the Software Requirements section of the *SSA* to the *IEZ11 SPD*.

You do not require optional software to install, or operate the IEZ11 Class Driver. However, if you want to develop applications for the IEZ11, you may require additional software products, depending on the particular application's requirements. For a list of compatible programming languages, see the Optional Software section of the *SSA* to the *IEZ11 SPD*.

1.3 License Registration

You must register the IEZ11-CLASS-DRIVER license through the VMS License Management Facility (LMF) in accordance with the license agreement signed by your site. The Product Authorization Key (PAK), which is shipped with the IEZ11 software, contains the license registration information you need. The PAK is a paper certificate that contains information about the license. This information allows you to run a particular piece of software.

During the installation, the system asks whether you have registered the IEZ11 license and loaded the appropriate authorization key. To run the Installation Verification Procedure (IVP) and use the software, you must register and load your license for the IEZ11 Class Driver *before* you start the installation.

To register a license under VMS, first log in to the system manager account, SYSTEM. You can then choose between two ways of registering the license:

- Invoke the SYS$UPDATE:VMSLICENSE.COM procedure. When it prompts you for information, respond with data from your PAK.
- At the DCL prompt, issue the LICENSE REGISTER command with the appropriate qualifiers, which correspond to PAK information.

If you intend to use the IEZ11 Class Driver on more than one node in a VAXcluster, you will need to perform a license load on the other nodes after you complete this installation. See Section 3.2.

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

1.4 VAXcluster Considerations

You can install the IEZ11 software from any node within a VAXcluster. However, you can only run the IEZ11 Class Driver from a system that meets the hardware requirements of the product. This includes a SCSI488/D connected to the external SCSI port.

Note that you must reinstall the IEZ11 software after each update of the VAX/VMS operating system. In mixed version VAXclusters, you must install the IEZ11 software independently under each version of VMS. You must not copy the software from one system disk to another.

1.5 Installation Procedure Requirements

The following sections discuss the various requirements for installing the IEZ11 software.

1.5.1 Time

The installation takes between 5 and 15 minutes, depending on the type of media and your system configuration.

Installing the IEZ11 software and running the IVP on a standalone VAXstation 3100 Model 30 system takes 5 minutes, if you install it from the RX23 floppy disk.

1.5.2 Privileges

To install the IEZ11 software, you must log into an account that has SETPRV or at least the following privileges:

- CMKRNL
- WORLD
- SYSPRV

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

1.5.3 Disk Space

Installing the IEZ11 software requires a certain amount of free disk storage space during the installation. Once you have installed the IEZ11 software, less storage space is required.

Table 1–2 summarizes the storage requirements.

Table 1–2: Disk Space Requirements

Kit	Blocks During Installation	Blocks After Installation
IEZ11 Version 1.0	1200	850

To determine the number of free disk blocks on the current system disk, enter the following command at the DCL prompt:

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

1.5.4 VMSINSTAL Requirements

When you invoke VMSINSTAL, it checks the following:

- Whether you have set your default device and directory to SYS$UPDATE
- Whether you are logged in to a privileged account
- Whether you have adequate quotas for installation
- Whether DECnet is running
- Whether any users are logged in to the system

NOTE

VMSINSTAL requires that the installation account have a minimum of the following quotas:

ASTLM = 24
BIOLM = 18
BYTLM = 18,000
DIOLM = 18
ENQLM = 30
FILLM = 20

If VMSINSTAL detects any problems during the installation, it notifies you and asks if you want to continue the installation. In some instances, you can type YES to continue. To stop the installation process, type NO or press Return. Then correct the problem and restart the installation.

1.5.5 Backing Up Your System Disk

At the start of the installation, VMSINSTAL asks if you have backed up your system disk. Digital recommends that you do a system disk backup before installing any software.

Use the backup procedures that are established at your site. For details on performing a system disk backup, see the section on the Backup Utility in the VMS System Management Subkit.

Chapter 2

Installing the IEZ11 Software

This chapter describes how to install the IEZ11 software.

Section 2.1 provides general information on the installation procedure.

Section 2.2 provides a detailed description of the installation procedure.

Section 2.3 provides information on error recovery.

2.1 General Information

This section includes information about the following topics:

- Accessing release notes
- Files added to your system
- Running the Installation Verification Procedure (IVP)
- Aborting the installation.

2.1.1 Accessing the Online Release Notes

The IEZ11 software provides online release notes. To view the online release notes, specify OPTIONS N when you invoke VMSINSTAL and then answer the relevant question during installation. This question is near the start of the installation procedure.

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

Once you have installed the IEZ11 software, you can locate the release notes in the following file:

```
SYS$HELP:IEZ11010.RELEASE_NOTES
```

2.1.2 Files Added to the System

During the installation, VMSINSTAL creates some files on your system. Tables 2-1 to 2-3 list these files:

Table 2–1: Files Provided by the IEZ11 Software Installation

File Specification	Purpose
SYS$LOADABLE_IMAGES:EKDRIVER.EXE	IEZ11 class driver
SYS$LIBRARY:IEZ11$DEF.ADA	IEZ11 VAX Ada language support file
SYS$LIBRARY:IEZ11$DEF.BAS	IEZ11 VAX BASIC language support file
SYS$LIBRARY:IEZ11$DEF.FOR	IEZ11 VAX FORTRAN language support file
SYS$LIBRARY:IEZ11$DEF.H	IEZ11 VAX C language support file
SYS$LIBRARY:IEZ11$DEF.MAR	IEZ11 VAX MACRO language support file
SYS$LIBRARY:IEZ11$DEF.PAS	IEZ11 VAX PASCAL language support file
SYS$LIBRARY:IEZ11$DEF.PLI	IEZ11 VAX PL/I language support file
SYS$LIBRARY:IEZ11$DEF.R32	IEZ11 VAX BLISS-32 language support file
SYS$LIBRARY:IEZ11$LIB.MLB	IEZ11 VAX MACRO support library
SYS$MANAGER:IEZ11$STARTUP.COM	Actual IEZ11 startup procedure, provided only if SCSI port present
SYS$SYSTEM:IEZ11$IVP.EXE	IEZ11 installation verification procedure (IVP)
SYS$MANAGER:IEZ11$CONFIG.COM	IEZ11 configuration procedure
SYS$SYSTEM:IEZ11$ITADS.EXE	IEZ11 exerciser utility, used also by IVP

Table 2–2: Macro-32 Example Programs Provided in SYS$SYSHELP:[EXAMPLES.IEZ11]

File Specification	Example of
INITIALIZE.MAR	IO$_INITIALIZE function
COMMAND.MAR	IO$_COMMAND function
COMMANDS.MAR	IO$_COMMANDS function
GO_TO_CACS.MAR	IO$_GO_TO_CACS function
GO_TO_CSBS.MAR	IO$_GO_TO_CSBS function
PASSCONTROL.MAR	IO$_PASSCONTROL function

(continued on next page)

Table 2–2 (Cont.): Macro-32 Example Programs Provided in SYS$SYSHELP:[EXAMPLES.IEZ11]

File Specification	Example of
READL.MAR	IO$_READLBLK function
READL_NO_MLA.MAR	IO$_READLBLK function with IO$M_NO_MLA modifier
READL_SET_TALK.MAR	IO$_READLBLK function with IO$M_SET_TALK modifier
READ_RESP.MAR	IO$_READ_RESP function
WRITEL.MAR	IO$_WRITELBLK function
WRITEL_SET_LIST.MAR	IO$_WRITELBLK function with IO$M_SET_LIST modifier
WRITEL_NO_MTA.MAR	IO$_WRITELBLK function with IO$M_NO_MTA modifier
WRITEL_EOI.MAR	IO$_WRITELBLK function with IO$M_EOI modifier
SER_POLL.MAR	IO$_SER_POLL function
SER_POLL_ALLDEV.MAR	IO$_SER_POLL function with IO$M_ALLDEVICES modifier
PAR_POLL.MAR	IO$_PAR_POLL function
PAR_POLL_LEAVIS.MAR	IO$_PAR_POLL function with IO$M_LEAVIS modifier
PARPOLLCON.MAR	IO$_PARPOLLCON function
LOADPARPOLL.MAR	IO$_LOADPARPOLL function
PARPOLLDIS.MAR	IO$_PARPOLLDIS function
PARPOLLUNCON.MAR	IO$_PARPOLLUNCON function
SENSEMODE.MAR	IO$_SENSEMODE function
SENSEMODE_CHAR.MAR	IO$_SENSEMODE function with IO$M_CHAR modifier
SENSEMODE_IOTYPE.MAR	IO$_SENSEMODE function with IO$M_IOTYPE modifier
SETEVENT.MAR	IO$_SETEVENT function
REC_EVENT.MAR	IO$_REC_EVENT function
REC_EVENT_NOWAIT.MAR	IO$_REC_EVENT function with IO$M_NOWAIT modifier
REC_EVENT_LEAVIS.MAR	IO$_REC_EVENT function with IO$M_LEAVIS modifier
SETMODE_ATTNAST.MAR	IO$_SETMODE function with IO$M_ATTNAST modifier
SETMODE_TIMEOUT.MAR	IO$_SETMODE function with IO$M_TIMOUT modifier
SETMODE_CHAR.MAR	IO$_SETMODE function with IO$M_CHAR modifier
SETMODE_BUFFERED.MAR	IO$_SETMODE function with IO$M_BUFFERED modifier

(continued on next page)

Table 2–2 (Cont.): Macro-32 Example Programs Provided in SYS$SYSHELP:[EXAMPLES.IEZ11]

File Specification	Example of
SETMODE_DIRECT.MAR	IO$_SETMODE function with IO$M_DIRECT modifier
SERVICE.MAR	IO$_SERVICE function
AUXILIARY.MAR	IO$_AUXILIARY function
CONFIG.MAR	IO$_CONFIG function
CONFIG_KEEP.MAR	IO$_CONFIG function with IO$M_KEEP modifier
DIAGNOSE_RESET.MAR	IO$_DIAGNOSE function with IO$M_RESET modifier
DIAGNOSE_REMOTE.MAR	IO$_DIAGNOSE function with IO$M_REMOTE modifier
DIAGNOSE_READ.MAR	IO$_DIAGNOSE function with IO$M_READ modifier
DIAGNOSE_WRITE.MAR	IO$_DIAGNOSE function with IO$M_WRITE modifier
SCSI488.MAR	IO$_COMMAND_SCSI488 function
SCSI488_RESPONSE.MAR	IO$_COMMAND_SCSI488 function with IO$M_RESPONSE modifier

Table 2–3: VAX C Example Programs Provided in SYS$SYSHELP:[EXAMPLES.IEZ11]

File Specification	Purpose
INITIALIZE.C	IO$_INITIALIZE function
COMMAND.C	IO$_COMMAND function
COMMANDS.C	IO$_COMMANDS function
GO_TO_CACS.C	IO$_GO_TO_CACS function
GO_TO_CSBS.C	IO$_GO_TO_CSBS function
PASSCONTROL.C	IO$_PASSCONTROL function
READL.C	IO$_READLBLK function
READL_NO_MLA.C	IO$_READLBLK function with IO$M_NO_MLA modifier
READL_SET_TALK.C	IO$_READLBLK function with IO$M_SET_TALK modifier
READ_RESP.C	IO$_READ_RESP function
WRITEL.C	IO$_WRITELBLK function
WRITEL_SET_LIST.C	IO$_WRITELBLK function with IO$M_SET_LIST modifier
WRITEL_NO_MTA.C	IO$_WRITELBLK function with IO$M_NO_MTA modifier

(continued on next page)

Table 2–3 (Cont.): VAX C Example Programs Provided in SYS$SYSHELP:[EXAMPLES.IEZ11]

File Specification	Purpose
WRITEL_EOI.C	IO$_WRITELBLK function with IO$M_EOI modifier
SER_POLL.C	IO$_SER_POLL function
SER_POLL_ALLDEV.C	IO$_SER_POLL function with IO$M_ALLDEVICES modifier
PAR_POLL.C	IO$_PAR_POLL function
PAR_POLL_LEAVIS.C	IO$_PAR_POLL function with IO$M_LEAVIS modifier
PARPOLLCON.C	IO$_PARPOLLCON function
LOADPARPOLL.C	IO$_LOADPARPOLL function
PARPOLLDIS.C	IO$_PARPOLLDIS function
PARPOLLUNCON.C	IO$_PARPOLLUNCON function
SENSEMODE.C	IO$_SENSEMODE function
SENSEMODE_CHAR.C	IO$_SENSEMODE function with IO$M_CHAR modifier
SENSEMODE_IOTYPE.C	IO$_SENSEMODE function with IO$M_IOTYPE modifier
SETEVENT.C	IO$_SETEVENT function
REC_EVENT.C	IO$_REC_EVENT function
REC_EVENT_NOWAIT.C	IO$_REC_EVENT function with IO$M_NOWAIT modifier
REC_EVENT_LEAVIS.C	IO$_REC_EVENT function with IO$M_LEAVIS modifier
SETMODE_ATTNAST.C	IO$_SETMODE function with IO$M_ATTNAST modifier
SETMODE_TIMEOUT.C	IO$_SETMODE function with IO$M_TIMOUT modifier
SETMODE_CHAR.C	IO$_SETMODE function with IO$M_CHAR modifier
SETMODE_BUFFERED.C	IO$_SETMODE function with IO$M_BUFFERED modifier
SETMODE_DIRECT.C	IO$_SETMODE function with IO$M_DIRECT modifier
SERVICE.C	IO$_SERVICE function
AUXILIARY.C	IO$_AUXILIARY function
CONFIG.C	IO$_CONFIG function
CONFIG_KEEP.C	IO$_CONFIG function with IO$M_KEEP modifier
DIAGNOSE_RESET.C	IO$_DIAGNOSE function with IO$M_RESET modifier
DIAGNOSE_REMOTE.C	IO$_DIAGNOSE function with IO$M_REMOTE modifier

(continued on next page)

Table 2–3 (Cont.): VAX C Example Programs Provided in SYS$SYSHELP:[EXAMPLES.IEZ11]

File Specification	Purpose
DIAGNOSE_READ.C	IO$_DIAGNOSE function with IO$M_READ modifier
DIAGNOSE_WRITE.C	IO$_DIAGNOSE function with IO$M_WRITE modifier
SCSI488.C	IO$_COMMAND_SCSI488 function
SCSI488_RESPONSE.C	IO$_COMMAND_SCSI488 function with IO$M_RESPONSE modifier

2.1.3 Running the Installation Verification Procedure (IVP)

The Installation Verification Procedure (IVP) for the IEZ11 software verifies the installation. During the installation, VMSINSTAL asks if you want to run the IVP as part of the installation. Type YES, to run it. It is recommended that you run the IVP to ensure that the IEZ11 software is correctly installed.

After you have installed the IEZ11 software, you can run the IVP independently to verify that the software is available on your system. If the installation procedure decides that a system reboot is required either to complete the installation, or after a system failure during installation, you might need to run the IVP manually to make sure that users can access the IEZ11 software.

You can only run the IVP successfully from a system that has all the prerequisite hardware and software installed. To do this enter the following DCL command:

```
$  RUN SYS$SYSTEM:IEZ11$IVP
```

2.1.4 Aborting the Installation

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

2.2 The Installation Procedure

The IEZ11 software installation procedure consists of a series of questions and informational messages.

2.2.1 Invoking VMSINSTAL

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

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

saveset-name
This is the installation name for the component. For the IEZ11 software, use the following installation name:

```
IEZ11010
```

device-name
This is the name of the device on which you intend to mount the media. For example, MKA500: is the device name for a cartridge tape drive. It is not necessary to use the console drive for this installation. However, if you do use the console drive, replace any media you removed once the installation is complete.

OPTIONS N
This is an optional parameter indicating that you want to see the release notes question. This question asks you if you want to read the release notes. If you do not include the OPTIONS N parameter, VMSINSTAL does not ask you about the release notes. It is advisable to read the release notes before continuing with the installation, in case they contain new information about the installation.

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

The following example invokes VMSINSTAL to install the IEZ11 software from tape drive MKA500: and shows the system response. This example uses the OPTIONS N release note parameter.

```
$  @SYS$UPDATE:VMSINSTAL IEZ11010 MKA500: OPTIONS N

      VAX/VMS Software Product Installation Procedure V5.3


It is 5-Jan-1990 at 19:58.
Enter a question mark (?) at any time for help.
```

If you do not enter either the product name, or the device name, VMSINSTAL prompts you for this information later in the installation procedure. VMSINSTAL does not prompt you for any options, so make sure you include OPTIONS N on the VMSINSTAL command line to access the release notes during the installation.

2.2.2 Installation Questions

This section describes the questions that are displayed during the installation.

Appendix A contains a sample installation procedure showing how you can answer the questions.

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

1. System backup

   VMSINSTAL asks if you are satisfied with your system backup. It is advisable to back up your system disk before installing the IEZ11 software. If you are satisfied with your system disk backup, press Return. Otherwise, type NO to discontinue the installation. After you back up your system disk, you can restart the installation.

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

2. Mounting the media

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

   If you type YES to indicate that you are ready, VMSINSTAL displays a message that the media containing the IEZ11 software has been mounted on the specified device, and that the installation has begun. For example:

   ```
   Please mount the first volume of the set on MKA500:.
   * Are you ready?  YES
   %MOUNT-I-MOUNTED, IEZ11 MOUNTED ON _MKA500:
   The following products will be processed:

     IEZ11 V1.0

       Beginning installation of IEZ11 V1.0 at 20:01

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

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

   If you specified OPTIONS N when you started the installation, VMSINSTAL asks a release notes question. You have four options for handling the release notes under VMS Version 5.3 or higher.

   For VMS Version 5.3 or higher the display is as follows:

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

   Additional Release Notes Options:

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

   * Select option [2]:
   ```

   If you choose option 1, VMSINSTAL displays the release notes immediately on the console terminal. You can terminate the display at any time by pressing CTRL/C.

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

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

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

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

VMSINSTAL automatically copies the IEZ11 software release notes to the the system help directory. The file specification is:

```
SYS$HELP:IEZ11010.RELEASE_NOTES
```

Choose option 4 if you have already read the release notes and are restarting the installation.

3. Continuing the installation

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

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

   The release notes are in the following file:

```
SYS$HELP:IEZ11010.RELEASE_NOTES
```

NOTE

> The name of the release notes file installed by VMSINSTAL consists of the current product name and version number. Do not delete release notes from previous versions of the IEZ11 software.

4. License Registration

   The installation procedure displays license information about your product and then asks if you have registered and loaded your authorization key for the IEZ11 Class Driver. For example:

```
Product:        IEZ11-CLASS-DRIVER
Producer:       DEC
Version:        1.0
Release Date:   24-DEC-1989

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

   If you have not registered and loaded your authorization key, you must answer "NO" to this question. You have to register and load your product authorization key to successfully complete the installation. If you have not done so, stop the installation, register and load your product authorization key, and then restart the installation.

5. Specifying the number of IEEE488 Bus Converters you want to support

   The IEZ11 Class Driver can concurrently support a large number of IEEE488 Bus Converters. However, the system configuration may limit the maximum number of IEZ11 Controllers that it can support to a smaller number. During installation, VMSINSTAL determines and displays the SCSI bus configuration, as known to VMS. Note however, that VMSINSTAL cannot at this point, detect either SCSI devices currently not known to the running VMS operating system, or non-standard SCSI devices such as non-disk and non-tape devices. These non-detectable devices will be indicated as unused in this message.

On a VAXstation 3100 Model 30 the message looks like:

```
Your current SCSI device configuration, as known to VMS, contains:
             (Pure internal SCSI buses not shown)

   2 disks
   1 tape

The current SCSI ID assignment is:

    0        1        2        3        4        5        6        7
 unused   unused   DKA200   DKA300   unused   MKA500    *CPU*   unused
                   <DISK>   <DISK>            <TAPE>

You may connect up to 4 IEZ11 SCSI488/D bus converter boxes
to the external SCSI connector of your VAXstation or MicroVAX.

WARNING: Connecting more than two IEZ11 SCSI488/D bus converter
         may conflict with future system hardware extensions.
```

Carefully read this message. Consider the future implications of non-standard SCSI devices, if your configuration includes those. Finally, choose the SCSI IDs that you want to assign for IEZ11 use. If you want to change the current SCSI ID you must invoke VMS again.

VMSINSTAL asks you for the total number of IEZ11 devices you intend to connect.

```
* How many IEZ11 devices will you connect to the SCSI port [1]?  2
```

Then VMSINSTAL prompts you for each free SCSI ID until the specified number of IEZ11s have been assigned free SCSI IDs. An example of the assignment of two IEZ11 SCSI to IEEE488 Bus Converters is as follows:

```
* Use device EKA0:, SCSI ID 0 (currently unused) [Y]?  Y
* Use device EKA1:, SCSI ID 1 (currently unused) [Y]?  N
WARNING: SCSI ID 4 is normally used for a disk device, but appears to be
free.
* Use device EKA4:, SCSI ID 4 (currently unused) [Y]?  Y
```

In the above example note the Warning message at the assignment of SCSI ID 4. This message is always displayed for SCSI IDs, which are by convention used for standard devices, but seem to be free in the current system. If you get a warning message carefully check, if this particular SCSI ID is free for assignment.

After the successful assignment of SCSI IDs to all requested IEZ11 SCSI to IEEE488 Bus Converters, VMSINSTAL displays the resulting SCSI bus configuration:

```
The current SCSI ID assignment is:

    0        1        2        3        4        5        6        7
  EKA0    unused   DKA200   DKA300    EKA4    MKA500    *CPU*   unused
  IEZ11             <DISK>   <DISK>   IEZ11    <TAPE>
```

6. Choosing to purge files

   You can choose to purge files from previous versions of IEZ11 that have been replaced by this installation. It is recommended that you purge these files. However, if you need to keep files from the previous version, type NO in response to the following question:

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

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

   If the EKDRIVER is not already loaded in the active VMS operating system, the installation procedure now asks if you want to run the IVP. If some version of the EKDRIVER is already loaded, the IVP cannot be run during the installation. This is because the EKDRIVER cannot be replaced, with the new version supplied by this kit, in the active system without a reboot. You have to run the IVP manually after rebooting the system. The required DCL command is:

   ```
   $  RUN SYS$SYSTEM:IEZ11$IVP
   ```

   The IVP for the IEZ11 software checks that the installation is successful. In addition it verifies that the software can communicate with the IEZ11. It is recommended that you run the IVP.

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

8. Allowing the system to reboot automatically after installation

   If some version of the EKDRIVER is already loaded into the active VMS system, you need to reboot the system to complete the installation. VMSINSTAL now asks if you will allow a reboot to be initiated by the installation procedure. To defer the reboot type NO. However, you cannot use the newly installed version of the EKDRIVER until you reboot your system.

   ```
   * Do you allow a system reboot during this installation [YES]?
   ```

2.2.3 Informational Messages

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

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

2.2.4 Running the Installation Verification Procedure

If you chose to run the IVP and no system reboot is required, VMSINSTAL runs it now. The IVP is successful, if you receive the following message.

```
*** IEZ11 VMS Class Driver Installation Verification Program ***

EKA0:  Success:  SCSI488/D Revision 2.6 (C) Copyright 1989 IOtech Inc.
```

This last line is displayed for each device configured during this installation. Note that running the IVP program is a convenient way of finding out the current firmware revision of the IEZ11. The firmware revision may be higher but never less than 2.6.

2.2.5 Completing the Installation Procedure

The following messages indicate that the entire installation procedure is complete:

```
   Installation of IEZ11 V1.0 completed at 20:07

   VMSINSTAL procedure done at 20:09
```

You can now log out of the privileged account:

```
$  LOGOUT
SYSTEM     logged out at 5-Jan-1990 20:10:34.78
```

NOTE

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

2.3 Error Recovery

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

```
%VMSINSTAL-E-INSFAIL, The installation of IEZ11 V1.0 has failed.
```

If the IVP fails, you receive detailed Error Messages from the Installation Test And Demonstration Software (ITADS) utility, used by the IVP.

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

- The operating system version is incorrect
- A prerequisite software version is incorrect
- Quotas necessary for successful installation are insufficient
- System parameter values for successful installation are insufficient
- The product license has not been registered and loaded
- Prerequisite hardware is incorrect
- Hardware is offline or not configured properly

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

Chapter 3

After Installing the IEZ11 Software

After installing the IEZ11 software, modify the system startup file to call the IEZ11 startup procedure. This causes the driver to load automatically when the system is booted. If you do not perform this step, you must call the IEZ11 startup procedure before loading the driver after booting.

3.1 Editing the System Startup File

Edit the system startup file to enable the automatic loading and reconfiguring of the IEZ11 Class Driver, when your system is rebooted.

Add the following command line to the system startup file, SYS$MANAGER:SYSTARTUP_V5.COM:

```
$  @SYS$STARTUP:IEZ11$STARTUP.COM
```

3.2 VAXcluster Considerations

For every node in the cluster, on which you intend to use the IEEE488 bus converter, include the call to the IEZ11 startup procedure. These nodes must have the required hardware and software prerequisites as described in Chapter 1. Do not include this call for other nodes.

You must alter the startup procedure for each node, so that it reflects that particular node's hardware and software configuration. Use the command procedure SYS$MANAGER:IEZ11$CONFIG.COM to create these startup files. Log in to the SYSTEM account on each node on which you want to use the IEZ11 Class Driver. Use the following DCL command to start the CONFIG procedure:

```
$  @SYS$MANAGER:IEZ11$CONFIG
```

The dialog produced by the CONFIG procedure is exactly the same as the SCSI ID assignment part of a full installation. This is because IEZ11$CONFIG.COM is also used by the installation procedure.

3.3 Determining and Reporting Problems

If you have a problem while using IEZ11, report it to Digital. Depending on the kind of problem and the type of support you have, you can take one of the following actions:

- Phone 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 concerns the IEZ11 documentation. Reader's Comments forms are at the back of each manual. Use the form from the manual in which you found the error. Include the section and page number in which the problem occurred.

Read the *Software Product Description (SPD)* and *Warranty Addendum* for an explanation of warranty. If you find a problem during the warranty period, report the problem as indicated already, or follow alternative instructions provided by Digital for reporting SPD nonconformance problems.

Appendix A

Sample Installation

This appendix contains a sample installation of the IEZ11 software. This sample was run on a system that had no previous version of the IEZ11 software installed. The Installation Verification Procedure (IVP) runs at the end of the installation.

```
 Welcome to VAX/VMS V5.3

Username: SYSTEM    ❶
Password:

 Welcome to VAX/VMS version V5.3 on node CSS012
    Last interactive login on Thursday, 25-JAN-1990 11:41
    Last non-interactive login on Thursday, 25-JAN-1990 11:41

$ @SYS$UPDATE:VMSINSTAL    ❷

 VAX/VMS Software Product Installation Procedure V5.3


It is 25-JAN-1990 at 12:04.

Enter a question mark (?) at any time for help.
* Are you satisfied with the backup of your system disk [YES]? YES    ❸
* Where will the distribution volumes be mounted: MKA500:    ❹

Enter the products to be processed from the first distribution volume set.
* Products: IEZ11010    ❺
* Enter installation options you wish to use (none):
Please mount the first volume of the set on MKA500:.
* Are you ready? YES                                    ❻
%MOUNT-I-MOUNTED, IEZ11 mounted on _MKA500:
The following products will be processed:

  IEZ11 V1.0    ❼

 Beginning installation of IEZ11 V1.0 at 12:05

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

        Product:      IEZ11-CLASS-DRIVER    ❾
        Producer:     DEC
        Version:      1.0
        Release Date: 24-DEC-1989

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

    Your current SCSI device configuration, as known to VMS, contains:
                (Pure internal SCSI buses not shown)

       2 disks
       1 tape       ❿

    The current SCSI ID assignment is:
```

```
        0        1        2        3        4        5        6        7
    unused   unused   DKA200   DKA300   unused   MKA500    *CPU*   unused
                      <DISK>   <DISK>            <TAPE>

    You may connect up to 4 IEZ11 SCSI488/D bus converter boxes      ❶❶
    to the external SCSI connector of your VAXstation or MicroVAX.

    WARNING: Connecting more than two IEZ11 SCSI488/D bus converter
             may conflict with future system hardware extensions.

* How many IEZ11 boxes will you connect to the SCSI port [1]: 2   ❶❷
* Use device EKA0:, SCSI ID 0 (currently unused) [Y]? Y
* Use device EKA1:, SCSI ID 1 (currently unused) [Y]? N
WARNING: SCSI ID 4 is normally used for a disk device, but appears to be free.
❶❸
* Use device EKA4:, SCSI ID 4 (currently unused) [Y]? Y

    The current SCSI ID assignment is:   ❶❹

        0        1        2        3        4        5        6        7
     EKA0     unused   DKA200   DKA300    EKA4    MKA500    *CPU*   unused
     IEZ11             <DISK>   <DISK>    IEZ11   <TAPE>


The following files will be provided by this kit:   ❶❺

    SYS$LIBRARY:IEZ11$DEF.ADA          SYS$LIBRARY:IEZ11$DEF.BAS
    SYS$LIBRARY:IEZ11$DEF.FOR          SYS$LIBRARY:IEZ11$DEF.H
    SYS$LIBRARY:IEZ11$DEF.MAR          SYS$LIBRARY:IEZ11$DEF.PAS
    SYS$LIBRARY:IEZ11$DEF.PLI          SYS$LIBRARY:IEZ11$DEF.R32
    SYS$LIBRARY:IEZ11$LIB.MLB          SYS$LOADABLE_IMAGES:EKDRIVER.EXE
    SYS$MANAGER:IEZ11$CONFIG.COM       SYS$SYSTEM:IEZ11$ITADS.EXE
    SYS$SYSTEM:IEZ11$IVP.EXE

    In addition to these mandatory files, a couple of example programs
    are provided in SYS$SYSHELP:[EXAMPLES.IEZ11]. All example programs
❶❻
    are provided as Macro-32 and as VAX C version and are documented in
    the IEZ11 User's Guide.

    The system specific startup commands are placed in:

    SYS$SPECIFIC:[SYS$STARTUP]IEZ11$STARTUP.COM   ❶❼

* Do you want to purge files replaced by this installation [YES]? YES
* Do you want to run the IVP after the installation [YES]? YES   ❶❽

        ***  Thank you, no more questions will be asked.  ***

%VMSINSTAL-I-SYSDIR, This product creates system disk directory
VMI$ROOT:[SYSHLP.EXAMPLES.IEZ11]. ❶❾
%VMSINSTAL-I-MOVEFILES, Files will now be moved to their target directories...
 ❷❿

*** IEZ11 VMS Class Driver Installation Verification Program ***

EKA0:  Success:  SCSI488/D Revision 2.6 (C) Copyright 1989 IOtech Inc.

EKA4:  ******  F a i l u r e  ******    (see below)
%SYSTEM-F-DEVOFFLINE, device is not in configuration or not available
❷❶
        The installation verification program reported some errors.
        Please check if all configured SCSI488/D Bus Controllers are
        connected to this MicroVAX or VAXstation by an appropriate
        SCSI cable, the SCSI bus routed and terminated properly,
        and all SCSI488/D Bus Controllers are powered on.

 After correcting these problems, please re-run the installation
 verification program using the DCL command

    $ RUN SYS$SYSTEM:IEZ11$IVP

 from a sufficiently privileged account (PHY_IO required).
```

```
 If you still get error reports, please consult the IEZ11
 hardware and software documentation for further assistance
 or contact your Digital Field Service representative.

 Installation of IEZ11 V1.0 completed at 12:13

Enter the products to be processed from the next distribution volume set.
* Products: EXIT    (22)

 VMSINSTAL procedure done at 12:14

$ LOGOUT
  SYSTEM       logged out at 25-JAN-1990 12:14:44.95
```

❶ Log in to the SYSTEM account.

❷ Invoke VMSINSTAL.COM.

❸ It is strongly recommended by Digital that you make a backup copy of your system disk before you start installing software.

❹ In this case, the distribution kit is on the (external) TK50 drive.

❺ The product designator for the IEZ11 software kit Version 1.0 is IEZ11010.

❻ In the case of removable media, for example the TK50 cartridge, VMSINSTAL prompts you to make the (first) volume ready for mounting.

❼ The distribution volume is scanned for the specified product(s), which are then listed here.

❽ VMSINSTAL always places a copy of the online release notes in SYS$SYSHELP with the filename IEZ11010.RELEASE_NOTES.

❾ VMSINSTAL displays the software license information for the current version of the IEZ11 Class Driver on the terminal. The license information must match the information on the Product Authorization Key (PAK), which you must install and load on the system before the start of the software installation.

❿ During installation, VMSINSTAL invokes the configuration procedure IEZ11$CONFIG.COM, which first displays the usage of SCSI IDs. In this case, the system contains two disks on SCSI IDs 2 and 3, and a tape on SCSI ID 5. The CPU itself holds SCSI ID 6. The SCSI IDs 0, 1, 4 and 7 seem to be free.

⓫ Based on the number of currently free SCSI IDs, you can add up to four IEZ11 SCSI to IEEE488 Bus Converters to the existing configuration in this case. This may vary from installation to installation, depending on the current configuration known to VMS.

⓬ The connection of only two IEZ11 SCSI to IEEE488 Bus Converters was requested. You will be prompted for each free SCSI ID, until the number of IEZ11 SCSI to IEEE488 Bus Converters that you requested are configured.

⓭ If a certain SCSI ID is usually used for a standard device (disk or tape), you will receive a warning message.

⓮ VMSINSTAL displays the final SCSI ID usage.

⓯ These are the mandatory files from the IEZ11 software kit.

⓰ A large number of example programs are provided, written in both Macro-32 and VAX C.

⓱ If the current system fulfills all requirements to run the IEZ11 Class Driver, VMSINSTAL generates a startup file containing all required commands to load the driver into the system.

⓲ This question is displayed only if the current configuration fulfills all requirements to run the IEZ11 Class Driver.

⓳ This informational message shows the exact location of the example programs mentioned above.

⓴ These lines are written by the IVP. Because in this particular installation the first converter box was switched to SCSI ID 0 and the second to SCSI ID 1. However, the driver configured the first converter box with SCSI ID 0 (EKA0:) and the second converter box incorrectly with SCSI ID 4 (EKA4:). As a result the verification program reports success for the first and failure for the second

converter box. Note, that the success message contains the firmware revision of the IEZ11 SCSI to IEEE488 Bus Converter, which always should be 2.6 or higher. In case of failure, the following %SYSTEM-F-xxxx message explains the cause of the failure.

❷❶ VMSINSTAL displays this text if a failure is reported from the IVP.

❷❷ This is the usual way to terminate VMSINSTAL.