VAX ISDN Software Installation Guide

Order Number: AA-NS17B-TE

The *VAX ISDN Software Installation Guide* describes how to prepare a VMS system before installing the VAX ISDN Software, and steps through the installation procedure.

Operating System and Version: VAX/VMS V5.4

Software Version: VAX ISDN V1.1

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Preface

Intended Audience

This manual provides information for system managers and DIGITAL software specialists. The manual assumes that readers understand and also have some experience of:

- Installation of software products on VAX/VMS
- Wide Area Networks (WANs)
- DECnet-VAX
- DIGITAL's VAX ISDN product.

Purpose of this Document

This manual explains how to install VAX ISDN and VAX ISDN ACCESS. Information about how to configure and start up the VAX ISDN Software is contained in the *VAX ISDN Software Management Guide*.

Associated Documentation

Digital provides the following documentation set for ISDN and related software:

- *VAX ISDN Software User's Guide*, consisting of:
  - *VAX ISDN Software Installation Guide*
  - *VAX ISDN Software Management Guide*
  - *VAX ISDN Programmer's Guide*
  - *Public ISDN Network Information*
  - *VAX ISDN Software Release Notes*
- *DIV32 Device Driver Manual*

Terminology

Throughout this document, the following terminology has been used:

Term	Meaning
VAX ISDN Software	The VAX ISDN Software in general, i.e. both VAX ISDN and VAX ISDN ACCESS
VAX ISDN	The full-function variety of the VAX ISDN Software
VAX ISDN ACCESS	The reduced-function variety of the VAX ISDN Software—see Section 1.1.1

Conventions

`text like this`	represents output from the computer
`boldface text like this`	represents user's input to the computer
SMALL CAPITALS LIKE THIS	represents a file specification

Chapter 1

Introduction

This chapter provides an introduction to the software and its installation procedure.

1.1 VAX ISDN Software Overview

The VAX ISDN software package is a Layered Product that runs under the VMS operating system and supervises the operation of circuit-switched connections over ISDN networks.

These connections are seen by network applications such as DECnet-VAX and VAX PSI as leased line connections. However, because these are not permanent, and can link a single VAX computer to various destinations on different occasions, these connections are called ''simulated leased line'' connections.

This first version of the VAX ISDN software supports the connection of Q-BUS based VAX CPUs to ISDN networks at the ''Basic Rate Interface'' reference point.

The ''Basic Rate Interface'' consists of a time-multiplexed 192 Kbps channel, divided up as follows:

a. two 64 Kbps data channels, called the *B-channels*
b. one 16 Kbps *signalling* channel, called the *D-channel*, which is used to convey network control information
c. one 48 Kbps channel for synchronisation

1.1.1 Product Variants

There are two variants of the VAX ISDN product:

- the full-function product ''VAX ISDN''
- an access-only variant, which is called ''VAX ISDN ACCESS''.

VAX ISDN ACCESS allows users to access the VAX ISDN Call Control on remote nodes which are connected to an ISDN and which have VAX ISDN installed and running. VAX ISDN ACCESS uses a DECnet logical link to connect to the node to be controlled remotely. VAX ISDN ACCESS uses the link to transmit ISDN Call Control messages between the remote node and the local VAX user.

VAX ISDN ACCESS only provides an interface to the VAX ISDN Call Control, and does not include the VAX ISDN Call Control software itself. It is meant to be used only on nodes that are not directly connected to the ISDN network.

1.1.2 Network Profiles

Network profiles each contain a description of the characteristics of a particular ISDN network.

The contents of the various Network Profiles for public ISDNs appear in the *Public ISDN Network Information* manual.

NOTE

You must use the correct Network Profile for your local ISDN network. Use of an incorrect Network Profile invalidates DIGITAL's support of the VAX ISDN Software.

1.2 Installation Overview

This software is installed by use of the VMSINSTAL utility. The procedure can be carried out by the customer himself at his own site.

Whatever variant is used, the VAX ISDN software will require DECnet-VAX to operate. The appropriate DECnet license, however, is not required for the operation of VAX ISDN on a single DECnet node.

1.3 What Happens During Installation

This section introduces the procedures you use when installing VAX ISDN and VAX ISDN ACCESS.

The procedures for installing VAX ISDN and VAX ISDN ACCESS are automated as far as possible. Throughout an installation, the procedures prompt you with questions that require a simple answer such as Yes or No. In many cases defaults have been set up. These are indicated in square brackets. To accept the default, simply press the Return key.

NOTE

If you do not understand a prompt or are uncertain about the the information required at any point during the installation, enter a question mark (?) in answer to the prompt. You will be provided with on-line help about that prompt and about the information you should enter.

Installation involves the following steps:

1. Executing VMSINSTAL.COM to copy the VAX ISDN Software files from the distribution kit to the system disk.
2. Executing the IVP (this can be done automatically as part of the installation procedure).
3. Adding the VAX ISDN Software startup file, ISDN$STARTUP.COM, to the SYSMAN startup database (for VAX ISDN only).
4. If necessary, updating the SYSGEN system parameters database. Note that if the VAX ISDN Software had previously been installed on the system, the system parameter values may already be correct.
5. Rebooting the system (not necessary if installing VAX ISDN ACCESS and if no system parameters are changed).

Chapter 2

Preparing for Installation

2.1 Distribution Kits

The software is supplied in two kits:

- the **ISDN V1.1** kit, which supplies the software for configuring a full-function VAX ISDN system
- the **ISDN ACCESS V1.1** kit, which supplies the software for configuring a VAX ISDN ACCESS system.

The software is distributed on the following media:

Table 2–1: Media for Installation of VAX ISDN

Medium	Quantity	Volume Label
TK50 cassette	1	ISDN
1600 BPI magnetic tape	1 x 2400 feet	ISDN
CDROM	(part of VMS CD)	

Table 2–2: Media for Installation of VAX ISDN ACCESS

Medium	Quantity	Volume Label
TK50 cassette	1	ISDN-A
1600 BPI magnetic tape	1 x 2400 feet	ISDN-A
RX23 floppy disk	1	ISDN-A
CDROM	(part of VMS CD)	

The contents of the various kits are listed in Appendix C.

2.2 Hardware Requirements

The hardware requirements for the VAX ISDN Software are listed as part of the System Support Addendum for this product. Please refer to this document to verify that these requirements are met.

NOTE

The VAX ISDN Software currently only supports the DEC ISDNcontroller 100 (''DIV32'' device) as interface to an ISDN network. The installation of the VAX ISDN software should therefore be performed on a VAX system that is equipped with a Q-Bus. No error will be reported, however, if this is not the case.

2.2.1 Checking the Disk Space

Before you install the VAX ISDN products, check that the system disk has enough free space by entering the following command:

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

The information displayed includes the number of free blocks on the disk. Consult Table 2–3 in order to make sure that there is enough space to install your system. (If you try to install either of the VAX ISDN products with too few free blocks, the installation procedure will of course fail.)

Table 2–3: Disk Space Requirements

	For Product Itself	Peak Requirement During Installation
VAX ISDN	1750 blocks	2200 blocks
VAX ISDN ACCESS	1020 blocks	1250 blocks

2.3 Software Requirements

The only required software for the installation procedure itself is VMS. Please refer to the System Support Addendum document to see which VMS version(s) are supported.

2.4 Information Required for Installation

Table 2–4 or Table 2–5 show the information which will be required during the installation.

Table 2–4: Installation Information—VAX ISDN

Item	Value
Kit name	ISDN
LMF product name	ISDN
Load device name	VMS device name of the device which reads the kit media, for example DUA1:.
Network Profile Identifier	One of the following: ATT AUST BRITISH FRENCH GERMAN JAPAN NORTHERN

Table 2–5: Installation Information—VAX ISDN ACCESS

Item	Value
Kit name	ISDN-ACCESS
LMF product name	ISDN-ACCESS
Load device name	VMS device name of the device which reads the kit media, for example DUA1:.

If you do not know the answers to any of these questions, obtain the missing values from your system manager, network administrator, or DIGITAL software specialist, before attempting the installation.

2.5 Installing VAX ISDN on a Cluster

In the case of a VAXcluster, VAX ISDN must be installed on each node that is going to run the software. One way to achieve this is to install VAX ISDN on any systems that are connected to the ISDN, and VAX ISDN ACCESS on the other VAX systems in the cluster.

NOTE

Before you install VAX ISDN or VAX ISDN ACCESS on any system in the cluster, you **MUST** ensure that VAX ISDN or VAX ISDN ACCESS are not running on any of the other VAXcluster systems during the installation, as described in Section 2.5.1. When you have finished installing the software on all the relevant nodes, you can start the VAX ISDN Software.

Refer to Appendix C for details of which files are installed in the system-specific root area and which are installed in the common root area.

2.5.1 How to Check if the VAX ISDN Software is Running

The easiest way to check all the nodes on a cluster to see if VAX ISDN or VAX ISDN ACCESS is running, is to use the SYSMAN utility to issue an ISDN$NCP command on each node. If the message

```
%ISDN-W-NOTSTARTED
```

is returned from every node (or ISDN$NCP does not exist on the node), then it is safe to start the installation. For example:

```
$ run sys$system:sysman Return
SYSMAN> set environment /cluster Return
%SYSMAN-I-ENV, current command environment:
        Clusterwide on local cluster
        Username SYSTEM       will be used on nonlocal nodes

SYSMAN> do mcr isdn$ncp show line 0 Return
```

The returned messages from each node will be in one of the following categories:

1. The message:

   ```
   %SYSMAN-I-OUTPUT, command execution on node JULIE
   ```

   followed by a normal display or error message from ISDN$NCP, in which case the node *is* running the VAX ISDN software. In such a case, the VAX ISDN software must be shut down before re-installing it.

2. The message:

   ```
   %SYSMAN-I-OUTPUT, command execution on node JEAN
   %ISDN-W-NOTSTARTED, VAX ISDN software not loaded
   ```

   which means that the VAX ISDN software is installed but not started, so it is safe to re-install.

3. The message:

   ```
   %SYSMAN-I-OUTPUT, command execution on node NICK
   %SYSTEM-F-NOSUCHOBJ, network object is unknown at remote node
   ```

   which means that the VAX ISDN has never been installed, so it is safe to install.

2.6 VAX ISDN and the License Management Facility (LMF)

VAX ISDN and VAX ISDN ACCESS are known by the VMS License Management Facility (LMF) as **ISDN** and **ISDN-ACCESS** respectively.

LMF has two classes of license, Availability and Capacity licenses. VAX ISDN and VAX ISDN ACCESS only support Availability licensing.

Before VAX ISDN or VAX ISDN ACCESS can be run on a system, you must license the system by running the LICENSE utility.

To license your system, you enter the information given on the Product Authorization Key (PAK), as described in Section 2.6.1 below. The PAK contains all the information you need to enter during license registration.

You are recommended to license ISDN or ISDN-ACCESS before you run the corresponding Installation Verification Procedure. If you do not do this, either of the following messages will be displayed, depending on the product:

Figure 2–1: "No license" Error Messages

```
%ISDN-W-NOAUTH, DEC ISDN use is not authorized on this node

%ISDN-W-NOAUTH, DEC ISDN-ACCESS use is not authorized on this node
```

2.6.1 Entering the PAK

To activate the license registration procedure, enter the following command:

```
$ @SYS$UPDATE:VMSLICENSE
```

You will then be prompted for the details contained in the ISDN or ISDN-ACCESS PAK. Each question corresponds to a heading in the PAK.

If you are installing on a cluster, you only need to perform this procedure on one node. Then enter the following command on each of the other nodes in the cluster that will be using the same ISDN license:

```
$ LICENSE LOAD ISDN
```

If you are licensing VAX ISDN ACCESS, enter the following command:

```
$ LICENSE LOAD ISDN-ACCESS
```

You can then install VAX ISDN or VAX ISDN ACCESS on the other nodes in the cluster as required.

Refer to the VMS documentation set for further details on using the VMSLICENSE procedure and the LICENSE utility.

2.6.2 Using VAX ISDN or VAX ISDN ACCESS

If you have not licensed VAX ISDN or VAX ISDN ACCESS, and you try to start up VAX ISDN or to access the VAX ISDN Call Control (using either ISDN$NCP or ISDN$SA), then your request will fail, and one of the LMF error messages shown in Figure 2–1 will be returned. In such cases you should install the license as detailed in Section 2.6.1 above and then start the product.

At any time, you can check that either license has been registered, enabled and loaded by issuing the following commands:

```
$ LICENSE LIST
```

to see if the license is in the license database (which is cluster-wide), and

```
$ SHOW LICENSE
```

to see if the license has been correctly loaded onto the local node.

Chapter 3

Installing VAX ISDN

This chapter guides the reader through the procedure for installing VAX ISDN. **If you are installing VAX ISDN ACCESS, refer instead to Chapter 4.**

3.1 Installing VAX ISDN Files from the Distribution Volume

To install the VAX ISDN Software from the distribution volume, you should carry out the following procedure at the system console.

1. Log in to the SYSTEM account.
2. Check that the disk has enough free space for VAX ISDN. Refer to Table 2–3 for details of how much free space you need on your system disk.
3. To start the installation procedure, enter the following command:

   ```
   $ @SYS$UPDATE:VMSINSTAL Return
   ```

   The procedure displays:

   ```
           VAX/VMS Software Product Installation Procedure V5.4

                      It is date at time.

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

   If DECnet is currently running on your system, the procedure warns you with the following message:

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

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

As you do not have to shut DECnet down in order to install VAX ISDN, you may answer YES to this question.

❹ The procedure continues with:

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

Make sure you have a good backup copy of the disk, as the installation will write to the system disk. If your system disk has not been backed up or you wish to make a fresh copy, answer NO; the procedure would then exit without installing the software. When you have backed up your system disk, you can start the installation procedure again.

If you answer YES, the procedure continues.

❺ Next it asks the following question:

```
* Where will the distribution volumes be mounted:
```

Enter the name of the device on which the volume containing the VAX ISDN Software will be mounted. *ddcu:* is the device name, where *dd* is the device code, *c* is the controller letter, and *u* is the unit number. For example, MUA0:.

❻ Next the procedure displays:

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

❼ Enter:

```
ISDN
```

and (as normal) press Return.

❽ The procedure responds with:

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

Enter **n** Return. This will request the display and/or printing of the Release Notes.

If you specified a device which is not already mounted in step ❺, then the installation procedure will continue as follows, otherwise it will proceed with step number ❿

```
Please mount the first volume of the set on device
* Are you ready?
```

❾ Load the distribution volume (labelled ISDN) into the corresponding drive.

Answer YES when you have done so.

The procedure will then mount the volume on the device, and display a message such as this:

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

❿ VMSINSTAL proceeds with:

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

        Beginning installation of ISDN V1.1 at time

    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 print or display the Release Notes and read them before continuing.

⓫ VMSINSTAL continues with:

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

        +-----------------------------------------------------+
        |      VAX ISDN Software Installation Procedure.      |
        +-----------------------------------------------------+


        Product:      ISDN        Producer:     DEC
        Version:      V1.1
        Release Date: 30-NOV-1990

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

⓬ Now answer either **Y** Return or **N** Return, depending on whether or not you have loaded the appropriate license, as described in Section 2.6.

If you have answered **Y** and the license is not active, then the following warning is displayed:

```
%ISDN-W-NOAUTH, DEC ISDN use is not authorized on this node
```

If the license has not been loaded, the installation procedure will continue, but the Installation Verification Procedure will not be activated. The following message is then displayed:

```
%ISDN-W-NOIVP, the Installation Verification Procedure will not be
executed
```

You should execute the IVP after loading the appropriate license, as described in Section 2.6.

⓭ If, on the other hand, the license is active, the procedure continues with:

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

Now press Return if you want to the Installation Verification Procedure to be run automatically at the end of the installation.

⓮ The procedure continues with:

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

⓯ Now press Return if you want to purge files resulting from a previous installation.

Note that if you are going to use the VAX ISDN Software on several nodes in a cluster, and are installing VAX ISDN or VAX ISDN-ACCESS on these nodes, the files installed in the SYS$COMMON area of the system disk are identical and should be purged.

⓰ Next the procedure asks you to specify the network identifier:

```
VAX ISDN Software V1.1 contains network-specific code.
In order  to install the software correctly,  you must
identify which  network  you will be using by entering
one of the following network identifier strings:

        ATT
        AUST
        BRITISH
        FRENCH
        GERMAN
        JAPAN
        NORTHERN
```

```
* Enter network identifier string:
```

⓱ Identify your local implementation of ISDN.

The procedure responds with:

```
        Your country specific network profile has been configured.

                        Installation continues...

                        No More Questions.
```

There may be a time delay of several minutes at this stage in the procedure. As you have now answered all the questions required for the installation, there is no need to watch the output, which will be like this:

```
%VMSINSTAL-I-RESTORE, Restoring product saveset B ...
%VMSINSTAL-I-RESTORE, Restoring product saveset C ...
%VMSINSTAL-I-RESTORE, Restoring product saveset D ...
```

⓲ If you had previously installed VAX ISDN (or another communication product that makes use of NETTRACE) on your system, a series of messages may be displayed. These messages tell you that some existing files will not be updated. This is done to preserve user modifications to these files.

These are the messages you may see:

```
%ISDN-I-FILEXISTS, VMI$ROOT:[SYSMGR]NETTRACE_SECURITY.COM already
exists on system
%ISDN-I-FILNOTINST, VMI$ROOT:[SYSMGR]NETTRACE_SECURITY.COM not
installed

%ISDN-I-FILEXISTS, VMI$ROOT:[SYSLIB]NETTRACE$KEY.INIT already
exists on system
%ISDN-I-FILNOTINST, VMI$ROOT:[SYSLIB]NETTRACE$KEY.INIT not
installed

%ISDN-I-FILEXISTS, VMI$ROOT:[SYSMGR]ISDN$SECURITY.COM already
exists on system
%ISDN-I-FILNOTINST, VMI$ROOT:[SYSMGR]ISDN$SECURITY.COM not
installed

%ISDN-I-FILEXISTS, VMI$ROOT:[SYSMGR]ISDN$STARTUP_SITE.COM already
exists on system
%ISDN-I-FILNOTINST, VMI$ROOT:[SYSMGR]ISDN$STARTUP_SITE.COM not
installed
```

⓳ The procedure checks the system parameter MAXBUF. If it is less than 2048 bytes, the procedure issues the following warning:

```
%ISDN-W-MAXBUFTOOSMALL, MAXBUF is too small, change from n to 2048.
```

where *n* is the current value of the MAXBUF parameter.

Change the value of the MAXBUF system parameter after you have installed VAX ISDN. See Section 3.2.3 for a description of how to do this.

⓴ Next the system will display a list of ''things to do''. More details on these are given in Section 3.2. Take heed of the advice given, the next time you see the DCL prompt.

Here is the corresponding display:

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

        Upon completion of this installation, please follow the instructions
        below:-

               - using the following command, add the VAX ISDN product to the
                 database of components to be automatically started when
                 the system is booted:-

                 $ RUN SYS$SYSTEM:SYSMAN
                 SYSMAN> startup add file ISDN$STARTUP.COM [/node=(A,B,C)]

               - REBOOT the system

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

㉑ When the last saveset has been copied, the procedure copies the distribution files from a subdirectory of SYS$UPDATE to their respective directories. (See Appendix C for details of which files are installed into which directories.) The following message is displayed then:

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

㉒ Now, if the license check at step ⓬ was successful and if you answered ''YES'' at step ⓭, the IVP will be run:

```
*****************************************************
*                                                   *
*   ISDN V1.1 Installation Verification Procedure   *
*                                                   *
*****************************************************

%ISDN-W-NOTSTARTED, VAX ISDN software not loaded Return
%ISDN-I-IVPSUCCESS, ISDN V1.1 IVP was successful
```

The %ISDN-W-NOTSTARTED message is not necessarily displayed; if it is displayed, ignore it.

```
        Installation of ISDN V1.1 completed at time

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

㉓ You can now leave the VMSINSTAL procedure by pressing Ctrl-Z. You will then be returned to the DCL prompt:

```
* Products: Ctrl-Z
 VMSINSTAL procedure done at time.

$
```

You may then remove the distribution medium from the device.

See Section 3.2 for what to do next.

3.1.1 Installation Failures

3.1.1.1 Incorrect Version of Operating System

During the installation, the procedure checks that the version number of the operating system (VMS) is correct. If it is incorrect, the procedure exits after displaying the following message:

```
This product requires VMS version V5.2-1 or later to install

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

Note that the correct version(s) are shown in the System Support Addendum.

3.1.1.2 Insufficient Disk Space

During the installation, the procedure checks that there is sufficient space on your disk for the VAX ISDN files. Refer to Table 2–3 for details of how many free blocks you need on your system to install VAX ISDN. If there is not enough space, the procedure exits after displaying the following messages:

```
%ISDN-E-NOSPACE, this installation requires nnnn blocks of
disk space.
%VMSINSTAL-E-INSFAIL, The installation of VAX ISDN V1.1 has
failed.
```

Make sure your system has sufficient free blocks before trying to install VAX ISDN again, by going through the procedure described in Section 2.2.1.

3.1.1.3 Insufficient Global Pages

If you receive the following message during installation:

```
%INSTALL-E-FAIL, failed to REPLACE entry for
DISK$VAXVMSRL052:<SYS0.SYSCOMMON.SYSLIB>DCLTABLES.EXE
-SYSTEM-F-GPTFULL, global page table is full
%INSTALL-W-DELETED, previous Known File Entry has been deleted
```

then it will be necessary to increase the value of the system parameter GBLPAGES by 354. To do this, edit the file SYS$SYSTEM:MODPARAMS.DAT and add the line:

```
ADD_GBLPAGES=354
```

Then issue the following command sequence:

```
$ @SYS$UPDATE:AUTOGEN SAVPARAMS GENPARAMS
$ @SYS$UPDATE:AUTOGEN SETPARAMS REBOOT
```

This will cause AUTOGEN to recompute the system parameters and reboot.

3.1.1.4 User Interrupt

If you decide to cancel the installation of VAX ISDN at any time by pressing Ctrl-Y, after a short time delay the following is displayed:

```
%VMSINSTAL-F-CTRLY, Installation cancelled via CTRL/Y.
%VMSINSTAL-F-UNEXPECTED, Installation terminated due to unexpected
event.

                VMSINSTAL procedure done at time
```

If you enter Ctrl-Y after the information message that the files are being moved to the target directories, your system will have some new and (if previously installed) some old VAX ISDN files. Therefore, you should reinstall the product.

3.2 Post-Installation Procedure

This section describes what must be done when the DCL prompt has reappeared, after exiting from VMSINSTAL.

3.2.1 Setting up the VAX ISDN Software

Please refer to the chapter entitled ''VAX ISDN Operations'' in *VAX ISDN Software Management Guide* for a detailed description of how to configure the various VAX ISDN files on your node or cluster. For users in Japan, note also the appendix specific to them in said Guide.

3.2.2 Updating the SYSMAN Startup Component Database

After a reboot, the VAX ISDN Software can be started using the following command:

```
$ @SYS$STARTUP:ISDN$STARTUP
```

It is recommended, however, that instead the file ISDN$STARTUP.COM be added to the ''startup component database'' of the SYSMAN utility, as described in the following sections.

This will result in automatic startup of the VAX ISDN Software at system boot time.

3.2.2.1 Non-Cluster System

The following command can be used:

```
$ run SYS$SYSTEM:SYSMAN
SYSMAN> startup add file ISDN$STARTUP.COM
```

The contents of the startup component database can then be displayed as follows:

```
SYSMAN> startup show file
%SYSMAN-I-COMFIL, contents of component database on node
Phase        Mode   File
------------ ------ --------------------------------
LPMAIN       DIRECT ISDN$STARTUP.COM
```

3.2.2.2 Cluster System

First of all, VAX ISDN must be installed on all the nodes in the cluster that will be physically connected to the ISDN. The Network Profile will be the same on all nodes in the cluster; if different profiles have been installed, the most recently installed one will take effect cluster-wide because ISDN$NETPRF.EXE (the Profile) is installed in the SYS$COMMON directory.

After installation, the following command should be issued (from any node in the cluster):

```
$ run SYS$SYSTEM:SYSMAN
SYSMAN> startup add file ISDN$STARTUP.COM /node=(A,B,C)
```

where A, B and C are the names of the nodes in the cluster where VAX ISDN has been installed.

The contents of the startup component database can then be displayed as follows:

```
SYSMAN> startup show file /full
%SYSMAN-I-COMFIL, contents of component database on node B
Phase        Mode   File
------------ ------ --------------------------------
LPMAIN       DIRECT ISDN$STARTUP.COM
      Enabled on A,B,C
      P1:<def> P2:<def> P3:<def> P4:<def> P5:<def> P6:<def> P7:<def> P8:<def>
```

NOTE

If ISDN$STARTUP.COM is enabled on nodes where VAX ISDN is not installed, this will result in a boot time error condition.

Please refer to the *VMS SYSMAN Utility Manual* for more details on adding, removing, enabling and disabling files in the startup component database.

3.2.3 Updating System Parameters

Update the system parameters to provide space for the data structures required by VAX ISDN.

3.2.3.1 MAXBUF Parameter

Make sure that the value of the MAXBUF parameter is set to at least 2048. Note that this is the current default value with VMS.

If necessary, use SYSGEN to change this parameter.

3.2.3.2 Using SYSGEN

Log in under the system manager's account and run SYS$SYSTEM:SYSGEN.

Within SYSGEN, then use the SHOW/MAJOR command to display the current values of the most significant system parameters. Use the SET command to specify new values for these parameters. For example:

```
$ RUN SYS$SYSTEM:SYSGEN
SYSGEN> use ACTIVE
SYSGEN> show /major
   .
   .
   .
SYSGEN> set MAXBUF 2048
SYSGEN> write ACTIVE
SYSGEN> exit
$
```

NOTE

If you alter your SYSGEN parameters because of a VAX ISDN installation, you must update SYS$SYSTEM:MODPARAMS.DAT so that subsequent use of the AUTOGEN procedure does not lose your changes.

Use of the AUTOGEN procedure and of the file SYS$SYSTEM:MODPARAMS.DAT are described in the VMS documentation set.

When you have changed the parameter values, reboot your system.

3.2.4 Disk Backup

Finally, when you have installed and configured VAX ISDN, and checked that the system is installed properly, back up the updated system disk and save the distribution kit for future updates.

3.2.5 Reboot

The ISDN software that you have installed will not come into operation until you have rebooted the system.

3.3 Installation Verification Procedure

This section explains how to check that the application has been installed correctly.

3.3.1 The Verification Steps

The Installation Verification Procedure, which is activated either automatically by VMSINSTAL or by the user, verifies that the various software components have been correctly installed on the system disk.

The IVP can be executed at any time after the installation (for troubleshooting purposes, for instance), by entering the following command:

```
$ @SYS$TEST:ISDN$IVP
```

3.3.2 Communication Verification

As this requires specific ISDN controller hardware, the IVP does *not* check successful communication between the VAX ISDN Software and the ISDN itself.

Please refer to the Troubleshooting chapter of *VAX ISDN Software Management Guide* for indications on this type of verification.

Chapter 4

Installing VAX ISDN ACCESS

This chapter guides the reader through the procedure for installing VAX ISDN ACCESS. **If you are installing VAX ISDN (full-function version), refer to Chapter 3 instead.**

4.1 Installing VAX ISDN ACCESS Files from the Distribution Volume

To install the VAX ISDN Software from the distribution volume, you should carry out the following procedure at the system console.

❶ Log in to the SYSTEM account.

❷ Check that the disk has enough free space for VAX ISDN ACCESS. Refer to Table 2–3 for details of how much free space you need on your system disk.

❸ To start the installation procedure, enter the following command:

```
$ @SYS$UPDATE:VMSINSTAL Return
```

The procedure displays:

```
        VAX/VMS Software Product Installation Procedure V5.4

                    It is date at time.

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

If DECnet is currently running on your system, the procedure warns you with the following message:

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

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

As you do not have to shut DECnet down in order to install VAX ISDN, you may answer YES to this question.

❹ The procedure continues with:

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

Make sure you have a good backup copy of the disk, as the installation will write to the system disk. If your system disk has not been backed up or you wish to make a fresh copy, answer NO; the procedure would then exit without installing the software. When you have backed up your system disk, you can start the installation procedure again.

If you answer YES, the procedure continues.

❺ Next it asks the following question:

```
* Where will the distribution volumes be mounted:
```

Enter the name of the device on which the volume containing the VAX ISDN Software will be mounted. *ddcu:* is the device name, where *dd* is the device code, *c* is the controller letter, and *u* is the unit number. For example, MUA0:.

❻ Next the procedure displays:

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

❼ Enter:

```
ISDN-ACCESS
```

and (as normal) press Return.

❽ The procedure responds with:

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

Enter **n** Return. This will request the display and/or printing of the Release Notes.

If you specified a device which is not already mounted in step ❺, then the installation procedure will continue as follows, otherwise it will proceed with step number ❿

```
Please mount the first volume of the set on device

* Are you ready?
```

❾ Load the distribution volume (labelled ISDN-A) into the corresponding drive.

Answer YES when you have done so.

The procedure will then mount the volume on the device, and display a message such as this:

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

❿ VMSINSTAL proceeds with:

```
The following products will be processed:
  ISDN-ACCESS V1.1

       Beginning installation of ISDN-ACCESS V1.1 at time

    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 print or display the Release Notes and read them before continuing.

⓫ VMSINSTAL continues with:

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

        +------------------------------------------------------------+
        |      VAX ISDN-ACCESS Software Installation Procedure.      |
        +------------------------------------------------------------+


        Product:      ISDN-ACCESS        Producer:     DEC
        Version:      V1.1
        Release Date: 30-NOV-1990
```

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

⓬ Now answer either **Y** Return or **N** Return, depending on whether or not you have loaded the appropriate license, as described in Section 2.6.

If you have answered **Y** and the license is not active, then the following warning is displayed:

```
%ISDN-W-NOAUTH, DEC ISDN-ACCESS use is not authorized on this node
```

If the license has not been loaded, the installation procedure will continue, but the Installation Verification Procedure will not be activated. The following message is then displayed:

```
%ISDN-W-NOIVP, the Installation Verification Procedure will not be
executed
```

You should execute the IVP after loading the appropriate license, as described in Section 2.6.

⓭ If, on the other hand, the license is active, the procedure continues with:

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

Now press Return if you want to the Installation Verification Procedure to be run automatically at the end of the installation.

⓮ The procedure continues with:

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

⓯ Now press Return if you want to purge files resulting from a previous installation.

Note that if you are going to use the VAX ISDN Software on several nodes in a cluster, and are installing VAX ISDN or VAX ISDN-ACCESS on these nodes, the files installed in the SYS$COMMON area of the system disk are identical and should be purged. The procedure responds with:

```
No More Questions.
```

There may be a time delay of several minutes at this stage in the procedure. As you have now answered all the questions required for the installation, there is no need to watch the output, which will be like this:

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

⓰ The procedure checks the system parameter MAXBUF. If it is less than 2048 bytes, the procedure issues the following warning:

```
%ISDN-W-MAXBUFTOOSMALL, MAXBUF is too small, change from n to 2048.
```

where *n* is the current value of the MAXBUF parameter.

Change the value of the MAXBUF system parameter after you have installed VAX ISDN-ACCESS. See Section 4.2.1 for a description of how to do this.

⓱ When the last saveset has been copied, the procedure copies the distribution files from a subdirectory of SYS$UPDATE to their respective directories. (See Appendix C for details of which files are installed into which directories.) The following message is displayed then:

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

⓲ Now, if the license check at step ⓬ was successful and if you answered ''YES'' at step ⓭, the IVP will be run:

```
        ************************************************************
        *                                                          *
        *   ISDN-ACCESS V1.1 Installation Verification Procedure   *
        *                                                          *
        ************************************************************

%ISDN-ACCESS-I-IVPSUCCESS, ISDN-ACCESS V1.1 IVP was successful

        Installation of ISDN-ACCESS V1.1 completed at time

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

⓳ You can now leave the VMSINSTAL procedure by pressing Ctrl-Z. You will then be returned to the DCL prompt:

```
* Products: Ctrl-Z
 VMSINSTAL procedure done at time.

$
```

You may then remove the distribution medium from the device.

See Section 4.2 for what to do next.

4.1.1 Installation Failures

4.1.1.1 Incorrect Version of Operating System

During the installation, the procedure checks that the version number of the operating system (VMS) is correct. If it is incorrect, the procedure exits after displaying the following message:

```
This product requires VMS version V5.2-1 or later to install

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

Note that the correct version(s) are shown in the System Support Addendum.

4.1.1.2 Insufficient Disk Space

During the installation, the procedure checks that there is sufficient space on your disk for the VAX ISDN ACCESS files. Refer to Table 2–3 for details of how many free blocks you need on your system to install VAX ISDN. If there is not enough space, the procedure exits after displaying the following messages:

```
%ISDN-E-NOSPACE, this installation requires nnnn blocks of
disk space.
%VMSINSTAL-E-INSFAIL, The installation of VAX ISDN ACCESS V1.1 has
failed.
```

Make sure your system has sufficient free blocks before trying to install VAX ISDN ACCESS again, by going through the procedure described in Section 2.2.1.

4.1.1.3 Insufficient Global Pages

If you receive the following message during installation:

```
%INSTALL-E-FAIL, failed to REPLACE entry for
DISK$VAXVMSRL052:<SYS0.SYSCOMMON.SYSLIB>DCLTABLES.EXE
-SYSTEM-F-GPTFULL, global page table is full
%INSTALL-W-DELETED, previous Known File Entry has been deleted
```

then it will be necessary to increase the value of the system parameter GBLPAGES by 354. To do this, edit the file SYS$SYSTEM:MODPARAMS.DAT and add the line:

```
ADD_GBLPAGES=354
```

Then issue the following command sequence:

```
$ @SYS$UPDATE:AUTOGEN SAVPARAMS GENPARAMS
$ @SYS$UPDATE:AUTOGEN SETPARAMS REBOOT
```

This will cause AUTOGEN to recompute the system parameters and reboot.

4.1.1.4 User Interrupt

If you decide to cancel the installation of VAX ISDN ACCESS at any time by pressing Ctrl-Y, after a short time delay the following is displayed:

```
%VMSINSTAL-F-CTRLY, Installation cancelled via CTRL/Y.
%VMSINSTAL-F-UNEXPECTED, Installation terminated due to unexpected
event.

                VMSINSTAL procedure done at time
```

If you enter Ctrl-Y after the information message that the files are being moved to the target directories, your system will have some new and (if previously installed) some old VAX ISDN ACCESS files. Therefore, you should reinstall the product.

4.2 Post-Installation Procedure

This section describes what must be done when the DCL prompt has reappeared, after exiting from VMSINSTAL.

4.2.1 Updating System Parameters

Update the system parameters to provide space for the data structures required by VAX ISDN ACCESS.

4.2.1.1 MAXBUF Parameter

Make sure that the value of the MAXBUF parameter is set to at least 2048. Note that this is the current default value with VMS.

If necessary, use SYSGEN to change this parameter.

4.2.1.2 Using SYSGEN

Log in under the system manager's account and run SYS$SYSTEM:SYSGEN.

Within SYSGEN, then use the SHOW/MAJOR command to display the current values of the most significant system parameters. Use the SET command to specify new values for these parameters. For example:

```
$ RUN SYS$SYSTEM:SYSGEN
SYSGEN> use ACTIVE
SYSGEN> show /major
   .
   .
   .
SYSGEN> set MAXBUF 2048
SYSGEN> write ACTIVE
SYSGEN> exit
$
```

NOTE

If you alter your SYSGEN parameters because of a VAX ISDN ACCESS installation, you must update SYS$SYSTEM:MODPARAMS.DAT so that subsequent use of the AUTOGEN procedure does not lose your changes.

Use of the AUTOGEN procedure and of the file SYS$SYSTEM:MODPARAMS.DAT are described in the VMS documentation set.

When you have changed the parameter values, reboot your system.

4.2.2 Disk Backup

Finally, when you have installed and configured VAX ISDN ACCESS, and checked that the system is installed properly, back up the updated system disk and save the distribution kit for future updates.

4.3 Installation Verification Procedure

This section explains how to check that the application has been installed correctly.

4.3.1 The Verification Steps

The Installation Verification Procedure, which is activated either automatically by VMSINSTAL or by the user, verifies that the various software components have been correctly installed on the system disk.

The IVP can be executed at any time after the installation (for troubleshooting purposes, for instance), by entering the following command:

```
$ @SYS$TEST:ISDN$IVP_ACCESS
```

4.3.2 Communication Verification

As this requires specific ISDN controller hardware, the IVP does *not* check successful communication between the VAX ISDN Software and the ISDN itself.

Please refer to the Troubleshooting chapter of *VAX ISDN Software Management Guide* for indications on this type of verification.

Appendix A

Example of a VAX ISDN Installation

The following is an example of a VAX ISDN software installation. Text entered by the user is shown in boldface.

```
$ @sys$update:vmsinstal Return

        VAX/VMS Software Product Installation Procedure V5.4

It is 19-DEC-1990 at 11:44.

Enter a question mark (?) at any time for help.
* Are you satisfied with the backup of your system disk [YES]? Return
* Where will the distribution volumes be mounted: mua0: Return

Enter the products to be processed from the first distribution volume set.
* Products: isdn Return
* Enter installation options you wish to use (none): n Return
Please mount the first volume of the set on  MUA0:.
* Are you ready? yes Return
%MOUNT-I-MOUNTED, ISDN mounted on _MUA0:
The following products will be processed:

  ISDN V1.1

        Beginning installation of ISDN V1.1 at 11:50

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

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

    Additional Release Notes Options:

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

* Select option [2]: 1 Return

DUA0:[SYS0.SYSUPD.ISDN011]ISDN011.RELEASE_NOTES;1
```

```
    Release notes for VAX ISDN, Version V1.1
```

At this point, the Release Notes are displayed on the screen; the user presses Return after reading each screen. Then the installation continues:

```
End of VAX ISDN V1.1 release notes.

* 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.

        +------------------------------------------------------+
        |        VAX ISDN Software Installation Procedure.     |
        +------------------------------------------------------+

        Product:      ISDN
        Producer:     DEC
        Version:      V1.1
        Release Date: 30-NOV-1990

* Does this product have an authorization key registered and loaded? yes Return
* Do you want to run the IVP after the installation [YES]? Return
* Do you want to purge files replaced by this installation [YES]? Return


        VAX ISDN Software V1.1 contains network-specific code.
        In order  to install the software correctly,  you must
        identify which  network  you will be using by entering
        one of the following network identifier strings:

                ATT
                AUST
                BRITISH
                FRENCH
                GERMAN
                JAPAN
                NORTHERN


* Enter network identifier string: french Return

        Your country specific network profile has been configured.

        Installation continues...

        No More Questions.
```

```
%VMSINSTAL-I-RESTORE, Restoring product saveset B ...
%ISDN-I-FILEXISTS, VMI$ROOT:[SYSMGR]NETTRACE_SECURITY.COM already exists on system
%ISDN-I-FILNOTINST, VMI$ROOT:[SYSMGR]NETTRACE_SECURITY.COM not installed
%ISDN-I-FILEXISTS, VMI$ROOT:[SYSLIB]NETTRACE$KEY.INIT already exists on system
%ISDN-I-FILNOTINST, VMI$ROOT:[SYSLIB]NETTRACE$KEY.INIT not installed
%VMSINSTAL-I-RESTORE, Restoring product saveset C ...
%ISDN-I-FILEXISTS, VMI$ROOT:[SYSMGR]ISDN$STARTUP_SITE.COM already exists on system
%ISDN-I-FILNOTINST, VMI$ROOT:[SYSMGR]ISDN$STARTUP_SITE.COM not installed
%ISDN-I-FILEXISTS, VMI$ROOT:[SYSMGR]ISDN$SECURITY.COM already exists on system
%ISDN-I-FILNOTINST, VMI$ROOT:[SYSMGR]ISDN$SECURITY.COM not installed
%VMSINSTAL-I-RESTORE, Restoring product saveset D ...

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

        Upon completion of this installation, please follow the instructions
        below:-

               - using the following command, add the ISDN product to the
                 database of components to be automatically started when
                 the system is booted:-

                 $ RUN SYS$SYSTEM:SYSMAN
                 SYSMAN> startup add file ISDN$STARTUP.COM [/node=(A,B,C)]

               - REBOOT the system

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

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

              ****************************************************
              *                                                  *
              *   ISDN V1.1 Installation Verification Procedure  *
              *                                                  *
              ****************************************************


%ISDN-W-NOTSTARTED, VAX ISDN software not loaded
%ISDN-I-IVPSUCCESS, ISDN V1.1 IVP was successful
        Installation of ISDN V1.1 completed at 12:02

Enter the products to be processed from the next distribution volume set.
* Products: Ctrl-Z
        VMSINSTAL procedure done at 12:20

$
```

Appendix B

Example of a VAX ISDN ACCESS Installation

Text entered by the user is shown in boldface.

```
$ @sys$update:vmsinstal Return

        VAX/VMS Software Product Installation Procedure V5.4


It is 20-DEC-1990 at 11:02.

Enter a question mark (?) at any time for help.
* Are you satisfied with the backup of your system disk [YES]? Return
* Where will the distribution volumes be mounted: mua0: Return

Enter the products to be processed from the first distribution volume set.
* Products: isdn-access Return
* Enter installation options you wish to use (none): n Return
Please mount the first volume of the set on  MUA0:.
* Are you ready? yes Return
%MOUNT-I-MOUNTED, ISDN mounted on _MUA0:
The following products will be processed:
  ISDN-ACCESS V1.1

        Beginning installation of ISDN-ACCESS V1.1 at 11:08

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

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

    Additional Release Notes Options:

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

```
* Select option [2]: 2 Return
* Queue name [SYS$PRINT]: Return
Job ISDN011 (queue SYS$PRINT, entry 257) started on LPA0)
* 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.

        +------------------------------------------------------------+
        |        VAX ISDN-ACCESS Software Installation Procedure.    |
        +------------------------------------------------------------+


        Product:      ISDN-ACCESS
        Producer:     DEC
        Version:      V1.1
        Release Date: 30-NOV-1990

* Does this product have an authorization key registered and loaded? yes Return
%ISDN-W-NOAUTH, DEC ISDN-ACCESS use is not authorized on this node
%ISDN-W-NOIVP, the Installation Verification Procedure will not be executed
```

Note that, in this example, a positive answer confirmed the license registration when, in fact, the VAX ISDN ACCESS license was not active. This is why the "ISDN-W-NOAUTH" message above was displayed in addition to the "ISDN-W-NOIVP" message.

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

        No More Questions.

%VMSINSTAL-I-RESTORE, Restoring product saveset B ...
%ISDN-ACCESS-I-FILEXISTS, VMI$ROOT:[SYSLIB]NETTRACE$KEY.INIT already exists on system
%ISDN-ACCESS-I-FILNOTINST, VMI$ROOT:[SYSLIB]NETTRACE$KEY.INIT not installed
%VMSINSTAL-I-RESTORE, Restoring product saveset C ...
%VMSINSTAL-I-MOVEFILES, Files will now be moved to their target directories...

 Installation of ISDN-ACCESS V1.1 completed at 11:20

Enter the products to be processed from the next distribution volume set.
* Products: Ctrl-Z
        VMSINSTAL procedure done at 11:21

$
```

Appendix C

Contents of the VAX ISDN Software Distribution Kits

NOTE

Except where otherwise stated, all the files installed as part of the VAX ISDN or VAX ISDN ACCESS installation procedure are copied to the SYS$COMMON area of the system disk.

C.1 Contents of the VAX ISDN Distribution Kit

The following release notes and help libraries are copied to the SYS$HELP directory:

- ISDN011.RELEASE_NOTES
- ISDN$NCP_HELP.HLB
- TRACEHLP.HLB

The following libraries are copied to the SYS$LIBRARY directory:

- ISDN$SA_DEF.H
- ISDN$SA_DEF.L32
- ISDN$SA_DEF.MLB
- ISDN$SA_DEF.PAS
- ISDN$SA_DEF.PEN
- ISDN$SA_DEF.R32

- ISDN$SA.OLB
- NETTRACE$KEY.INIT

The following images are copied to the SYS$LOADABLE_IMAGES directory:

- ISDN$DRIV.EXE
- ISDN$L2.EXE†
- ISDN$L3.EXE†
- ISDN$CC.EXE
- LES$DECNET.EXE
- LES$DECNET_ALT.EXE
- LES$LES.EXE
- ISDN$NETPRF.EXE†
- LES$TRACE.EXE
- LES$TRACE_MBX.EXE
- SDDRIVER.EXE
- SDDRIVER.ULD

The following DCL command files are copied to the SYS$MANAGER directory:

- ISDN$NPF_SHOW.COM
- ISDN$SECURITY.COM *(this file is installed in the SYS$SPECIFIC area)*
- ISDN$SHUTDOWN.COM
- ISDN$STARTUP_SITE.COM *(this file is installed in the SYS$SPECIFIC area)*
- NETTRACE_INSTALL.COM
- NETTRACE_SECURITY.COM

The following message files are copied to the SYS$MESSAGE directory:

- ISDN$MESSAGES.EXE
- LES$ACP_MESSAGES.EXE

† this file is network-dependent, and is chosen according to the operator's answer during the installation procedure

- NETTRACE_MESSAGES.EXE

The following shareable images are copied to the SYS$SHARE directory:

- ISDN$ACPCODESHR.EXE
- ISDN$ACPDATASHR.EXE
- LES$ACP_CODE.EXE
- NETTRACE$ISDN$L2_ANALYZE.EXE
- NETTRACE$ISDN$L3_ANALYZE.EXE
- NETTRACE$ISDN$CC_ANALYZE.EXE

The following DCL command file is copied to the SYS$STARTUP directory:

- ISDN$STARTUP.COM

The following files are copied to the SYS$SYSTEM directory:

- ISDN$NCP.EXE *(this file is installed in the SYS$SPECIFIC area)*
- ISDN$LES_CONTROL.DAT
- LES$STARTUP.EXE
- LES$ACP.EXE
- NETLTC.EXE
- NETTRACE.EXE

The following DCL command file is copied to the SYS$TEST directory:

- ISDN$IVP.COM

C.2 Contents of the VAX ISDN ACCESS Distribution Kit

The following release notes and help libraries are copied to the SYS$HELP directory:

- ISDN-ACCESS011.RELEASE_NOTES
- ISDN$NCP_HELP.HLB
- TRACEHLP.HLB

The following libraries are copied to the SYS$LIBRARY directory:

- ISDN$SA_DEF.H
- ISDN$SA_DEF.L32
- ISDN$SA_DEF.MLB
- ISDN$SA_DEF.PAS
- ISDN$SA_DEF.PEN
- ISDN$SA_DEF.R32
- ISDN$SA_ACCESS.OLB
- NETTRACE$KEY.INIT

The following DCL command files is copied to the SYS$MANAGER directory:

- NETTRACE_INSTALL.COM

The following message file is copied to the SYS$MESSAGE directory:

- NETTRACE_MESSAGES.EXE

The following shareable images are copied to the SYS$SHARE directory:

- NETTRACE$ISDN$L2_ANALYZE.EXE
- NETTRACE$ISDN$L3_ANALYZE.EXE
- NETTRACE$ISDN$CC_ANALYZE.EXE

The following files are copied to the SYS$SYSTEM directory:

- ISDN$NCP.EXE *(this file is installed in the SYS$SPECIFIC area)*
- NETTRACE.EXE
- NETLTC.EXE

The following DCL command file is copied to the SYS$TEST directory:

- ISDN$IVP_ACCESS.COM

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