DEC CIT Server for VMS Installation

Order Number: AA-KX60D-TE

This document contains instructions for installing DEC Computer Integrated Telephony (CIT) Server Software for VMS on VAX/VMS systems. It also explains how to read the online release notes before or after installing the product.

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Contents

1	INTRODUCTION TO INSTALLING THE KIT		1
2	PREPARING TO INSTALL DEC CIT SERVER SOFTWARE		1
	2.1	Contents of the Installation Kit	2
	2.2	Hardware Requirements	2
	2.3	Software Requirements	3
	2.4	Installation Procedure Requirements	4
	2.4.1	Basic Requirements • 4	
	2.4.2	Setting System Resources • 5	
	2.4.3	Synchronous Drivers • 6	
	2.4.4	Support of License Management Facility (LMF) • 7	
	2.4.5	Information Required During Installation • 8	
	2.4.6	Starting and Testing the Kit • 11	
	2.4.7	Reinstalling the Product • 11	
3	INSTALLING DEC CIT SERVER SOFTWARE		12
	3.1	Using VMSINSTAL	12
	3.2	Installation Procedure	12
4	AFTER THE INSTALLATION		18
	4.1	Starting the DEC CIT Server Software	19
	4.2	Changing CITSR$CP.COM	20
	4.3	Previous Versions of DEC CIT Server Software	21
	4.4	Run the IVP	21
	4.5	Read the Release Notes	22
	4.6	Back Up the System Disk	22
	4.7	Files Created During Installation	22
5	ERROR CONDITIONS		24
	5.1	Errors During the Installation Procedure	24
	5.2	Errors at Startup	25
	5.3	Errors During the IVP	25
	5.4	Determining and Reporting Problems	27
6	EXAMPLE INSTALLATION		27

Contents

EXAMPLES

1 Example Log File for Server Installation 27

TABLES

1 Media Details 2

2 Memory Requirements for Startup 5

3 Files Created During Installation 22

1 INTRODUCTION TO INSTALLING THE KIT

The DEC CIT product set consists of two separately installable software products:

- DEC CIT Server for VMS software (CITSR), which is installed on the server node of a DEC CIT network.
- DEC CIT Applications Interface for VMS software, which is installed on client nodes in a DEC CIT network.

Note that if you want to run applications on the server node, you have to install the DEC CIT Applications Interface for VMS software on the server node as well as installing the DEC CIT Server for VMS software.

This manual describes how to install DEC CIT Server for VMS software. For instructions on installing DEC CIT Applications Interface for VMS software, see the *DEC CIT Applications Interface for VMS Installation* manual.

This manual is intended for system managers who understand the general installation procedures on VAX/VMS systems. Keep this document with your distribution kit. You will need to refer to it again if you receive any maintenance updates, or if you need to reinstall DEC CIT Server for VMS software for any other reason.

Release Notes

This document does not contain release information; instead, release notes are provided online. You can read the release notes before you install DEC CIT Server for VMS software, and at any time after the product is installed.

To read the release notes, follow the installation procedure up to step 4. At that step, you can choose to display or to print the release notes, or both. You can then choose whether to continue with the installation procedure.

For information on reporting problems with DEC CIT Server for VMS software, see Section 5.4.

2 PREPARING TO INSTALL DEC CIT SERVER SOFTWARE

The following sections describe the checks and actions required before you install the DEC CIT Server for VMS software.

2.1 Contents of the Installation Kit

The Bill of Materials (BOM) specifies the number and contents of your media. Check the contents of your kit against the list in the Bill of Materials. If your kit is damaged, or if you find that parts of it are missing, call your Digital representative.

Table 1 shows details of the media on which the DEC CIT Server for VMS software may be delivered.

Table 1 Media Details

Media	Quantity	Label
TK50 cartridge	1	DEC CIT Server
1600 bpi magnetic tape	1	DEC CIT Server
CDROM	1	VMS Consolidated Software Distribution

Note that the TK50 cartridge can be read from both a TK50 and a TK70 tape drive.

2.2 Hardware Requirements

The DEC CIT Server for VMS software V2.1 requires the following hardware:

- If you require support for PBX functions, DEC CIT Server for VMS software must be installed on a VAX/VMS system that is connected to a PBX.

  To connect the PBX to a server node:

  1. A synchronous communications device must be installed on the server node.
  2. The communications device must be connected to the PBX by means of a synchronous cable that is provided by the PBX manufacturer.

- If you require support for DECvoice functions, DEC CIT Server for VMS software must be installed on a VAX or a MicroVAX with at least one DECvoice DTC04 module and telephone line interface (TLI) assembly installed in the Q-bus backplane and bulkhead.

If you require support for both PBX and DECvoice functions, you need to fulfill both requirements.

2.3 Software Requirements

The DEC CIT Server for VMS software requires the following software:

- VAX/VMS Version 5.0 or later.
- The *VAX Wide Area Network Device Drivers* kit, if you want support for PBX functions. This kit supplies the appropriate software device driver for the synchronous communications device that links the server node to a PBX.
- The DECvoice DTC04 software installed and made available to the system, if you want support for DECvoice functions. See the *DECvoice DTC04 Software Reference Manual* for details of the DECvoice installation kit and instructions for installing the DECvoice software.

Note that if VAX P.S.I. Native or Multihost is installed on your system, you cannot install DEC CIT Server for VMS software to support PBX functions. The installation procedure fails if you attempt to install the server software to support PBX functions and VAX P.S.I. Native or Multihost is already installed. In addition, if you install VAX P.S.I. Native or Multihost after installing the DEC CIT Server software, you may not be able to start the DEC CIT Server software.

If VAX P.S.I. Access is installed on your system, you can install the DEC CIT Server software to support PBX functions.

If you install the DEC CIT Server for VMS software to support only DECvoice functions, the installation of VAX P.S.I. Native or Multihost on the same system does not affect starting the DEC CIT Server software.

If you require support for DECvoice functions, you must fulfill the DECvoice software requirements. For more information, see the *DECvoice DTC04 Software Reference Manual*.

The VMS operating system comes with a variety of support options, or classes. Classes include such features as networking and RMS journaling. To use DEC CIT Server for VMS software, your system should be running a version of VMS that includes the following classes:

- VMS Required Saveset
- Network Support

For a complete list of the required classes, see the Software Support Addendum (SSA), which comes with the Software Product Description (SPD) 29.91.*xx*.

2.4 Installation Procedure Requirements

This section describes the preparations you need to make before installing the kit.

2.4.1 Basic Requirements

The installation takes up to 30 minutes, depending on the type of media and the configuration of your system. For example, installation takes about 10 minutes from a TK50 cartridge on a MicroVAX II. To ensure the installation runs smoothly:

- Back up the system disk before starting the installation procedure.
- Check that sufficient disk space is available. DEC CIT Server for VMS software requires 1500 free blocks during the installation process, and 1050 blocks after the installation.
- Either install DEC CIT Server for VMS software from the system manager's account with your default device and directory set to SYS$UPDATE, or ensure that you can enable the following VMS privileges:

  ACNT
  CMKRNL
  EXQUOTA
  LOG_IO
  NETMBX
  OPER
  PRMMBX
  SYSNAM
  SYSPRV

TMPMBX

For more information on VMS privileges, see the *Guide to Setting Up a VMS System*. For a summary of VMS privileges, see the *VMS DCL Concepts Manual*.

2.4.2 Setting System Resources

The following notes indicate the system resources required to install the DEC CIT Server software. Table 2 shows the minimum amount of Nonpaged Dynamic Memory (NPAGEDYN) required by the server software. This amount depends on whether you want to support only PBX functions, only DECvoice functions, or both PBX and DECvoice functions.

Table 2 Memory Requirements for Startup

Functions	Nonpaged Dynamic Memory
PBX only	50,608 bytes minimum
DECvoice only	33,280 bytes minimum for one DECvoice module + 12,624 bytes for each additional module
PBX and DECvoice	63,760 bytes minimum for a PBX and one DECvoice module + 12,624 bytes for each additional module

Note that the minimum requirements in Table 2 are for free Nonpaged Dynamic Memory that the server software will use, and are in addition to existing system resource requirements.

To establish the amount of Nonpaged Dynamic Memory, enter:

```
$ SHOW MEMORY/POOL/FULL
```

The system displays the system memory resources, including the amount of free Nonpaged Dynamic Memory. If the amount of free Nonpaged Dynamic Memory is less than the minimum required by the server software, you may not be able to start the DEC CIT Server software.

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

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

To change the value for nonpaged pool, enter:

```
(MIN_NPAGEDYN = number)
```

where *number* is the current value for NPAGEDYN plus the extra needed for CIT functions. This value should account for the extra Nonpaged Dynamic Memory required by the DEC CIT Server software. Remember that the system cannot increase the value of NPAGEDYN beyond that of NPAGEVIR (the virtual nonpaged pool), so you may also have to change NPAGEVIR.

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

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

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

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

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

2.4.3 Synchronous Drivers

The DEC CIT Server for VMS software requires an appropriate device driver for the synchronous communications device to link the server node to a PBX.

Before installing and running the DEC CIT Server for VMS software, you must install the appropriate software device driver supplied with the *VAX Wide Area Network Device Drivers* kit. See the documentation supplied with that kit for instructions on installing the driver.

The following notes apply to DPV11, DMB32, DSH32, DSV11, DST32, and DSB32 devices:

- **DPV11**

  The driver for the DPV11 needs to be identified to VMS before it can be used. You need to supply the CSR (control/status register) address and the interrupt vector for the device during the CITSR installation procedure. Note that these values are octal.

  The system displays the default values for the CSR address and the interrupt vector for the DPV and asks you to confirm that it is correct:

```
    Default SYSGEN configuration data for the DPV

    Device CSR is     %O760270
    Device VECTOR is  %O000300

* Is this correct [YES]?
```

  To determine the correct vector and CSR address settings, refer to the Field Service Site Guide for your machine.

  The startup procedures for CITSR can then automatically configure the DPV11 whenever you start the DEC CIT Server software.

- **DMB32, DSV11, DSH32, DST32, and DSB32**

  To connect the DMB32, DSV11, DSH32, DST32, or DSB32 device to the PBX, the V24 adapter is required. Note that for the DMB32, the adapter cable must be connected to the synchronous port for it to be configured when the system is powered up. If it is attached later, the SYSGEN utility must be used to connect it into the system. From the system manager's account, enter:

```
$ RUN SYS$SYSTEM:SYSGEN
SYSGEN> AUTOCONFIGURE ALL
SYSGEN> EXIT
```

  The DMB32, DSV11, DSH32, DST32, and DSB32 devices are autoconfigured on the VMS system start up.

2.4.4 Support of License Management Facility (LMF)

The DEC CIT Server for VMS software supports the VMS License Management Facility (LMF) for installation on VMS V5.0 and later systems. If you need to register DEC CIT Server for VMS software through the LMF, the kit includes a Product Authorization Key (PAK) containing the information you need for registration.

To find out whether a license is already registered on your system, enter the following:

```
$ LICENSE LIST CITSR
```

Now press Return. If you do not have the PAK registered, the system displays only general LMF information.

To register your PAK, use the SYS$UPDATE:VMSLICENSE.COM command procedure. For more information on this command procedure and the LMF, refer to *VMS License Management Utility Reference Manual*.

The installation procedure for DEC CIT Server for VMS software asks if you have an authorization key registered and loaded. You can install the kit without authorization, but you will not be able to run the kit or the Installation Verification Procedure (IVP).

2.4.5 Information Required During Installation

The installation procedure creates a startup profile file (CITSR$CP.COM) for the DEC CIT Server software. To create this file, the installation procedure asks you if you want support for PBX and DECvoice functions, and then prompts you for the appropriate specifications.

If you want support for PBX functions, the installation procedure prompts you to specify:

1. The protocol that CIT will use to communicate with the PBX.
   For this release of CIT, the protocol identifier is one of the following:
   - HCI™ for Mitel's SX200™ PBX or Mitel's SX2000™ PBX
   - HICOM™ for Siemens' HICOM™ PBX
   - IAP[1] for Northern Telecom's Meridian 1™ PBX
2. The communications device you are using to connect to the PBX.
   Specify the name of the device in the form *dev-c-u*, where:
   - *dev* is the mnemonic for the type of device (DMB, DMF, DPV, DSB, DST, or DSV). Note that you should use DST for the DSH device.

™ HCI, SX200, and SX2000 are trademarks of MITEL Corporation.

™ HICOM is a trademark of Siemens AG.

[1] IAP is an acronym used by Digital for Northern Telecom's protocol ISDN/AP™.

™ ISDN/AP and Meridian 1 are trademarks of Northern Telecom Ltd.

- *c* is the number of the hardware controller for the device.
- *u* is a line number.

For example, DSV-0-0.

3 A logical identifier for the PBX.

The logical identifier for the PBX is a name that you use to identify the PBX and the communications device. The logical identifier can be any name of up to 15 alphanumeric characters (for example, CIT_PBX).

4 A customer number.

If you are connecting the server to a Northern Telecom Meridian 1 PBX, that PBX may be partitioned into a number of *user groups*. If that is the case, ask the PBX administrator to supply the appropriate customer number.

You are prompted for a customer number only if you specify IAP as the PBX protocol identifier.

You need to specify a customer number with HICOM only if the PBX is supporting more than one link to the server. In that case, use the customer number to specify the link number. Ask the PBX administrator for the correct value to use. With only one link, the default is 0, and you need not specify the customer number.

If you want support for DECvoice functions, the installation procedure prompts you to specify:

1 The number of DECvoice modules the server software will use.

2 The physical device name for each DECvoice module.

The physical device name for a DECvoice module is in the form *VXm0* where *m* is an alphabetical character that identifies a module. The default physical device name for one module installed on the server is *VXA0*. If, for example, three DECvoice modules are installed, the default device names are *VXA0*, *VXB0*, and *VXC0*.

The DEC CIT Server software installation procedure prompts you for the device name of each module and also gives default options. For example, *VXA0* for the first module and *VXB0* for the second module that you specify. You can, however, specify a different order (for example, *VXD0* as the first module).

3 A logical identifier for each DECvoice module.

Each logical identifier can be any name of up to 15 alphanumeric characters (for example, CIT_VOXA for the first module, CIT_VOXB for the second module).

The logical identifier identifies a PBX or DECvoice module to the DEC CIT Server software. This means that you need to specify that same logical identifier for the PBX or module when:

- You install the DEC CIT Applications Interface and want to run the IVP for that kit. The client installation procedure prompts for the logical identifiers that you specify during the server software installation procedure.
- You use CIT Control Program (CITCP) commands that require the logical identifier for the PBX or DECvoice module as a parameter.

Note that if a large number of DECvoice modules are installed on a CIT server, it may take less time to edit the startup file for the applications interface than to provide information during the installation procedure. By editing SYS$MANAGER:CITSR$CP.COM, you can specify details of the DECvoice modules in the startup file instead of supplying all the device names and logical identifiers at the installation prompts.

To define the DECvoice modules in this way, complete the following procedure:

1 Follow the installation procedure and specify the logical identifier and device name for one DECvoice module. (If you require support for PBX functions, supply all information that is required for PBX support.)

Do not select automatic startup during the installation procedure.

2 When the installation is complete, edit SYS$MANAGER:CITSR$CP.COM to include the device names and logical identifiers of the other DECvoice modules installed on the server.

For example, if you specified the DECvoice module *VXA0* during installation with the logical identifier *CIT_VOXA*, copy the following line in SYS$MANAGER:CITSR$CP.COM for each additional module, including a different device name and logical identifier:

```
SET DEVICE/NAME=VXA0/LOGICAL_IDENTIFIER=CIT_VOXA/STATE=ON/PROTOCOL=VOICE
```

If, for example, you wanted to define the DECvoice module *VXB0* you must add the following line to CITSR$CP.COM:

```
SET DEVICE/NAME=VXB0/LOGICAL_IDENTIFIER=CIT_VOXB/STATE=ON/PROTOCOL=VOICE
```

3 Start up the server software (see Section 4.1) and run the IVP (see Section 4.4).

2.4.6 Starting and Testing the Kit

During the installation procedure, you are asked whether you want to start up the server software automatically after installation. If you select automatic startup:

- The server startup file (CITSR$STARTUP.COM) is automatically run as soon as installation is complete.
- The installation procedure asks you whether you want to run the Installation Verification Procedure (IVP). The IVP tests the installation by communicating with a PBX and/or with a DECvoice module.

  Note that if there is more than one DECvoice module installed on the server, the IVP that you run as part of the installation procedure only checks that data is transferred between the server and the last module that you specify.

  If you want to test each DECvoice module, you can run a separate IVP after the installation. This procedure tests the link to each PBX and/or each DECvoice module that you specify. See Section 4.4.

If you do not want to select automatic startup, you have to run the startup file and the IVP sometime after the installation. See Section 4.1 for details on starting the DEC CIT Server software and Section 4.4 for details on running the IVP.

2.4.7 Reinstalling the Product

If there is already a previous version of the DEC CIT Server software running on your system, the procedure does not restart the server with the new software and you are not prompted to run the IVP. You have to reboot the server after the installation and run CITSR$STARTUP.COM before running the IVP and before the CIT client software can communicate with a PBX or DECvoice module (see Section 4.1). For more information on reinstalling the software, see the *DEC CIT Server for VMS System Management* manual.

3 INSTALLING DEC CIT SERVER SOFTWARE

The following sections describe the VMSINSTAL command procedure and give a step-by-step guide to the DEC CIT Server for VMS software installation procedure. VMSINSTAL.COM resides in SYS$UPDATE.

3.1 Using VMSINSTAL

The VMSINSTAL command line has the following format:

```
$ @VMSINSTAL CITSR source OPTIONS N
```

CITSR

The release or maintenance update of DEC CIT Server for VMS software.

source

The name of the device from which you are installing the DEC CIT Server for VMS software. The device name is in the form *ddcu:* where *dd* is the device code, *c* is the controller, and *u* is the unit number.

OPTIONS N

Set the OPTIONS N parameter if you want VMSINSTAL to prompt you to display or to print the release notes.

If you enter only @VMSINSTAL as the command line, VMSINSTAL prompts you for the first two parameters, but it does not prompt for OPTIONS N. Digital recommends that you enter the command line, including the OPTIONS N parameter, so that you can read the release notes during installation.

If you do not set the OPTIONS N parameter, the release notes are automatically copied to SYS$HELP.

3.2 Installation Procedure

The rest of this section describes the installation procedure. You can get help by entering a question mark (?) in response to any of the questions asked during the installation procedure.

These installation instructions use *MUA0:* as an example of the source device from which you install the DEC CIT Server for VMS software.

To cancel the installation procedure at any time, press Ctrl/Y. VMSINSTAL then deletes all files it has created up to that point and exits. If you want to retry the installation procedure after pressing Ctrl/Y, you must proceed from step 2.

Step 1: Log in to the system manager's account and set your default device and directory to SYS$UPDATE.

```
Username: SYSTEM
Password:
$ SET DEFAULT SYS$UPDATE
```

Step 2: Invoke VMSINSTAL.

```
$ @VMSINSTAL CITSR MUA0: OPTIONS N

   VAX/VMS Software Product Installation Procedure V5.n-n

It is dd-mmm-yyyy at hh:mm.
Enter a question mark (?) at any time for help.

%VMSINSTAL_W_DECNET, Your DECnet network is up and running.
* Do you want to continue anyway [NO]?
```

If you want to run the IVP, your DECnet network must be up and running. Note that the DECnet message is displayed only if you are installing on a system with VMS V5.0 or V5.1.

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

Step 3: Insert the installation volume.

Insert the tape into the drive. VMSINSTAL automatically mounts the volume for you.

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

Enter Y at the prompt.

```
%MOUNT-I-MOUNTED, CITSR mounted on CITVAX$MUA0:

The following products will be processed:

  CITSR V2.1

        Beginning installation of CITSR V2.1 at hh:mm

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

Step 4: Select a release notes option.

This step applies only if you specified OPTIONS N in step 2.

```
Release Notes Options:

    1.  Display release notes
    2.  Print release notes
    3.  Both 1 and 2
    4.  Copy release notes to SYS$HELP
    5.  Do not display, print or copy release notes

* Select option [2]:
```

If you select option 1, VMSINSTAL displays the release notes immediately on your screen. You can terminate the display at any time by pressing Ctrl/C.

If you select option 2, VMSINSTAL prompts you for a queue name.

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

You can enter a queue name, or send the file to the default output print device.

If you select option 3, VMSINSTAL displays the release notes immediately on your screen and then prompts you for a queue name.

If you select option 4, VMSINSTAL copies the release notes to SYS$HELP.

VMSINSTAL then prompts you with the following:

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

Step 5: Verify licensing.

```
            CITSR Software Installation Procedure.

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

                Product:      CITSR
                Producer:     DEC
                Version:      2.1
                Release Date: 21-DEC-1990

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

If you have not registered and loaded the PAK for this kit, the installation will continue but you will not be able to run the software or the IVP during or after the installation. See Section 2.4.4.

Step 6: Select installation options.

```
     CITSR configuration procedure.

    You must configure CITSR to define the functions it will
    support - PBX and/or DECvoice.

* Do you want support for PBX functions [YES]?:
%VMSINSTAL-I-RESTORE, Restoring product saveset C ...

    You must configure CITSR to define your PBX specific protocol
    and the default values for startup.
```

You are prompted for PBX values only if you want support for PBX functions:

```
* Enter the PBX protocol identifier :
```

Enter the identifier for the protocol CIT will use to communicate with the PBX.

For this release of CIT, the protocol identifier is one of the following:

- HCI for Mitel's SX200 PBX (British Telecom Regent™ 257 PBX) or Mitel's SX2000 PBX
- HICOM for Siemens' HICOM PBX
- IAP for Northern Telecom's Meridian 1 PBX

If you specify IAP, the installation procedure also prompts for a customer number:

```
* Enter the PBX customer number [0]:
```

If you are connecting the server to a Northern Telecom Meridian 1 PBX, that PBX may be partitioned into a number of *user groups*. If that is the case, ask the PBX administrator to supply the appropriate customer number.

You need to specify a customer number with HICOM only if the PBX is supporting more than one link to the server. In that case, use the customer number to specify the link number. Ask the PBX administrator for the correct value to use. With only one link, the default is 0 and you need not specify the customer number.

The default value is 0.

```
* Enter the name of the communications device :
```

Specify the name of the communications device connecting the server to the PBX in the form *dev-c-u*, where:

- *dev* is the mnemonic for the type of device (DMB, DMF, DPV, DSB, DST, or DSV).
- *c* is the number of the hardware controller for the device.
- *u* is a line number.

For example, DSV-0-0.

Note that you should use the DST mnemonic for a DSH device.

```
* Enter the logical identifier for the PBX:
```

Enter the logical identifier for the PBX to which the server is connected. The logical identifier that you specify can be any name of up to 15 alphanumeric characters (for example, CIT_PBX). This logical identifier must also be specified when the DEC CIT Applications Interface is installed and used.

```
* Do you want support for DECvoice functions [YES]?
%VMSINSTAL-I-RESTORE, Restoring product saveset D ...
```

You are prompted for DECvoice values only if you want support for DECvoice functions.

```
* Enter the number of DECvoice modules CITSR will use [1]:
```

Specify the number of DECvoice modules installed on the server node that CITSR will use. The installation procedure then prompts you for the device name and logical identifier for each DECvoice module that you specify.

Note that if you specify 0 for the number of DECvoice modules CITSR will use, the installation procedure continues but it does not prompt for additional DECvoice details. The server software is then installed but without support for DECvoice functions.

```
* What is the name of the DECvoice module? [VXA0]:
```

Specify the physical device name for a DECvoice module. The device name is in the form *VXm0* where *m* is the character that identifies each module. The default values for *m* are in alphabetical order, starting with *VXA0*. You can specify other values if you want to enter the device names in a different order (for example, *VXD0* as the first module).

```
* Enter the logical identifier for the DECvoice module VXA0:
```

Specify the logical identifier for the DECvoice module. The logical identifier can be any name of up to 15 alphanumeric characters (for example, CIT_VOXA). The same logical identifier for each module must be specified when the DEC CIT Applications Interface is installed and used.

```
Your startup profile has been configured.

* Do you want to startup CITSR automatically after installation [YES]?
```

Select automatic startup if you want the installation procedure to start the DEC CIT Server software for you. If there is already a version of the server software running on your system, the procedure does not restart the server with the new software. You have to reboot the server after the installation and run CITSR$STARTUP.COM (see Section 4.1).

Automatic startup fails if you specify an incorrect value during installation. To correct any of these values in the startup file, you must run the file SYS$MANAGER:CITSR$CONFIG.COM when installation is complete. This allows you to specify new names, and creates a new version of the startup file—see Section 4.1 and Section 4.2 for details of how to start up the server software and run the configuration file.

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

You are prompted to run the IVP only if you choose automatic startup. If you choose not to have the IVP run automatically, refer to Section 4.4 for instructions on how to run the IVP.

The values you have specified are now included in the profile file SYS$MANAGER:CITSR$CP.COM, which is called by the startup file SYS$STARTUP:CITSR$STARTUP.COM.

```
    You have answered all the questions necessary
    for the installation to be completed. The
    installation will now run unattended

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

The procedure copies the files before running the IVP. If you installed DECvoice, the software startup also begins executing. Table 3 in Section 4.7 shows all the files that are created by the installation procedure, and the directories to which they are moved.

Step 7: Verify successful installation.

If you choose to run the IVP (see step 6), VMSINSTAL now calls the IVP to verify that the DEC CIT Server for VMS software has been installed successfully. The IVP checks that data is transferred between the server and a PBX and/or a DECvoice module.

```
   Starting the CITSR V2.1 Installation Verification Procedure

Logical Identifier =   logical_identifier
Device             =   device_name
State              =   Running

The CITSR IVP has completed successfully

The CIT server software has established
communication to the device shown.
```

Note that if you run the IVP as part of the installation procedure, it only checks that communication has been established between the server and the last DECvoice module that you specify. If you want to run the IVP for each DECvoice module, you can rerun the IVP after installation. See Section 4.4.

If the IVP cannot run, or if it completes but is not successful, it returns a failure message. Failure of the IVP does not necessarily mean that you have failed to install the DEC CIT Server for VMS software. For information on the conditions that can cause the IVP to fail, see Section 5.3.

```
CITSR V2.1 Installation Verification Procedure
completed at hh:mm

Installation of CITSR V2.1 completed at hh:mm

VMSINSTAL procedure done at hh:mm

$ LOGOUT
SYSTEM     logged out at dd-mmm-yyyy hh:mm:ss.ss
```

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

4 AFTER THE INSTALLATION

The following sections describe the actions to take when installation is complete, and include a table showing files that are created during installation.

4.1 Starting the DEC CIT Server Software

The installation procedure creates a startup profile file (SYS$MANAGER:CITSR$CP.COM) which defines the PBX values and/or DECvoice values that you specified during the installation procedure. The startup file SYS$STARTUP:CITSR$STARTUP.COM calls the profile file CITSR$CP.COM and starts the DEC CIT Server software. It also sets the communications device ON (if you specified PBX values during installation) and/or initializes the DECvoice module (if you specified DECvoice values).

If you did not select automatic startup during the installation procedure, you now have to run SYS$STARTUP:CITSR$STARTUP.COM to start the CIT server software. If your CIT server node is a member of a cluster, you must run CITSR$STARTUP from the SYS$STARTUP directory for that particular node.

If you want the DEC CIT Server for VMS software to restart whenever the system restarts, include the following command line in the site-specific startup command file (SYSTARTUP_V5.COM):

```
$ @SYS$STARTUP:CITSR$STARTUP
```

Note that the following instructions should be included in the system startup command file before the call to CITSR$STARTUP:

1. The instructions to start DECnet. DECnet must be running before the server software starts.
2. The instructions to start the DECvoice software, if you installed DEC CIT Server for VMS software to support DECvoice functions. The DECvoice command file SYS$STARTUP:VOX$STARTUP.COM must be run before the call to CITSR$STARTUP. VOX$STARTUP makes the DECvoice software available to the system. See the *DECvoice DTC04 Software Reference Manual* for more information.
3. The instruction to run a VAX P.S.I. Access/CIT setup file. If you install the CIT server software on a system which has VAX P.S.I. Access installed, you need to run the CITSR$SETUP_ACCESS.COM to allow both CIT server software and the VAX P.S.I. Access software to run. Include the following line in the startup file for your system before the commands to start DECnet and VAX P.S.I. Access:

   ```
   $ @SYS$STARTUP:CITSR$SETUP_ACCESS
   ```

4.2 Changing CITSR$CP.COM

If you need to change any of the values in the startup profile file SYS$MANAGER:CITSR$CP.COM, you must run the CIT server configuration file (SYS$MANAGER:CITSR$CONFIG.COM). CITSR$CONFIG.COM prompts you to specify new default values, and creates a new version of the profile file containing those values.

To run CITSR$CONFIG.COM, log in to the system manager's account and enter:

```
$ @CITSR$CONFIG
```

The configuration program asks you if you want support for PBX and DECvoice functions and then prompts you for the appropriate values.

You must only select support for functions that you requested during installation. If you select additional support, startup will fail. If, for example, you only requested support for DECvoice functions during installation, you must only request support for DECvoice functions during the configuration procedure.

If you want support for additional functions, you must reinstall the server software (see Section 2.4.7).

If you want support for PBX functions, the configuration procedure prompts you to specify:

- The communications device used for the link to the PBX
- The logical identifier for the PBX
- The PBX protocol identifier (HCI, HICOM, or IAP)
- A customer number (only if you specify IAP as the protocol)

If you want support for DECvoice functions, the configuration procedure prompts you to specify:

- The number of DECvoice modules installed on the server that the DEC CIT Server software will use
- The physical device name of each DECvoice module
- The logical identifier for each DECvoice module

It then creates a new profile file for startup. When you next run SYS$STARTUP:CITSR$STARTUP.COM, either manually or from your system startup command procedure, the DEC CIT Server software starts the communications device and sets it ON (if you specified PBX values during installation) and/or initializes the DECvoice software (if you specified DECvoice values during installation).

See the *DEC CIT Server for VMS System Management* manual for more information on controlling and configuring the CIT server system.

4.3 Previous Versions of DEC CIT Server Software

If there was a previous version of DEC CIT Server for VMS software running before you installed the current version, you must reboot the system and run the startup file from the system account to start the new version.

4.4 Run the IVP

If you did not run the IVP automatically after installation, run it now to check that the DEC CIT Server for VMS software is installed correctly. Enter the following command:

```
$ @SYS$TEST:CITSR$IVP
```

The procedure asks you to confirm that you have started the CITSR software and then prompts you to specify the logical identifier for a PBX or DECvoice module. The logical identifier for the PBX or DECvoice module must be the same as that defined in the CITSR$CP.COM profile file.

The IVP then checks that data is being transferred between the server and the PBX or the DECvoice module. For example:

```
Logical Identifier =   CIT_PBX
Device             =   DST-0-0
State              =   Running
```

If the IVP is successful, the following messages are displayed:

```
The CITSR IVP has completed successfully.

The CIT server software has established
communication to the device shown.
```

The IVP then prompts:

```
* Do you want to run another IVP? [No] :
```

If you want to run the IVP for another PBX or DECvoice module, the IVP then prompts you for the logical identifier of a PBX or module. It then checks that data is being transferred between the server and that PBX or DECvoice module.

If the IVP fails, it does not necessarily mean that you have failed to install the DEC CIT Server for VMS software. See Section 5.

4.5 Read the Release Notes

If you did not follow the recommendation to read the release notes during installation (see Section 3.2), read them now.

When installation is complete, you can read the release notes by displaying or printing the file SYS$HELP:CITSR021.RELEASE_NOTES.

4.6 Back Up the System Disk

When you have installed DEC CIT Server for VMS software successfully, back up the system disk.

4.7 Files Created During Installation

Table 3 shows all the files that are created by the installation procedure, and the directories to which they are moved.

It also indicates which files are specific to PBX support, and which files are specific to DECvoice support.

Table 3 Files Created During Installation

File Name	Directory	PBX or DECvoice Specific
CITSR021.RELEASE_NOTES	SYS$HELP	
CITSR$CP.HLB	SYS$HELP	
TRACEHLP.HLB	SYS$HELP	

Table 3 (Cont.) Files Created During Installation

File Name	Directory	PBX or DECvoice Specific
CITSR$ACPCODESHR.EXE	SYS$LIBRARY	
LES$ACP_CODE.EXE	SYS$LIBRARY	
NETTRACE$L2E_ANALYZE.EXE	SYS$LIBRARY	
NETTRACE$L2_ANALYZE.EXE	SYS$LIBRARY	
NETTRACE$L3_ANALYZE.EXE	SYS$LIBRARY	
CITSR$DR.EXE	SYS$LOADABLE_IMAGES	PBX
CITSR$HCI.EXE[1]	SYS$LOADABLE_IMAGES	PBX
CITSR$HICOM.EXE[1]	SYS$LOADABLE_IMAGES	PBX
CITSR$IAP.EXE[1]	SYS$LOADABLE_IMAGES	PBX
CITSR$L2DM.EXE	SYS$LOADABLE_IMAGES	PBX
CITSR$L2.EXE	SYS$LOADABLE_IMAGES	PBX
CITSR$L2E.EXE	SYS$LOADABLE_IMAGES	PBX
CITSR$MGMT.EXE	SYS$LOADABLE_IMAGES	
CITSR$SHR.EXE	SYS$LOADABLE_IMAGES	
CITSR$VOICE.EXE	SYS$LOADABLE_IMAGES	DECvoice
LES$DECNET.EXE	SYS$LOADABLE_IMAGES	
LES$DECNET_ALT.EXE	SYS$LOADABLE_IMAGES	
LES$LES.EXE	SYS$LOADABLE_IMAGES	
LES$TRACE.EXE	SYS$LOADABLE_IMAGES	PBX
LES$TRACE_MBX.EXE	SYS$LOADABLE_IMAGES	PBX
CITSR$CONFIG.COM	SYS$MANAGER	
CITSR$CP.COM	SYS$MANAGER	
LES$ACP_MESSAGES.EXE	SYS$MESSAGE	
NETTRACE_MESSAGES.EXE	SYS$MESSAGE	

[1]SYS$LOADABLE_IMAGES contains either CITSR$HCI.EXE, CITSR$HICOM.EXE or CITSR$IAP.EXE depending on whether you specify HCI, HICOM, or IAP as the communications protocol used to communicate with the PBX.

Table 3 (Cont.) Files Created During Installation

File Name	Directory	PBX or DECvoice Specific
CITSR$STARTUP.COM	SYS$STARTUP	
CITSR$SETUP_ACCESS.COM	SYS$STARTUP	
CITSR$CP.EXE	SYS$SYSTEM	
CITSR$LES_CONTROL.DAT	SYS$SYSTEM	
LES$ACP.EXE	SYS$SYSTEM	
LES$STARTUP.EXE	SYS$SYSTEM	
NETTRACE.EXE	SYS$SYSTEM	
NETLTC.EXE	SYS$SYSTEM	
CITSR$IVP.COM	SYS$TEST	

5 ERROR CONDITIONS

The following sections give advice on what to do if you have problems that cause the installation procedure or the IVP to fail, or problems following successful installation.

5.1 Errors During the Installation Procedure

If the installation procedure fails, the following message is displayed:

```
CITSR V2.1 Installation failed.
```

An error during installation can be caused by the use of an incorrect version of the VAX/VMS operating system, or if system quotas or resources are inadequate. The installation will also fail if you try to start up the DEC CIT Server for VMS software and you have not registered it through the License Management Facility. See Section 2.4.4.

For descriptions of the error messages generated by these conditions, see the *VMS System Messages and Recovery Procedures*.

If installation fails and you solve the problem, you must repeat the installation procedure from step 2.

If you attempt to install the DEC CIT Server software to support PBX functions, and VAX P.S.I. Native or Multihost is installed on the system, the installation fails. You cannot install DEC CIT Server software to support PBX functions if VAX P.S.I. Native or Multihost is already installed on the system. See Section 2.3.

5.2 Errors at Startup

If you select the automatic startup option during the installation process and startup fails, CIT displays one or more error messages.

If the following messages are displayed, the DEC CIT Server software has started but there is a communications problem or a resources problem at the server.

```
%LES-S-PROC_ID, identification of created process is nnnnnnnn
%CIT-E-ABORT, function was aborted
Installation of CITSR V2.1 completed at hh:mm
```

See the Troubleshooting section in the *DEC CIT Server for VMS System Management* manual for more information.

If the following message is displayed at startup, the DEC CIT Server software has failed to start.

```
%CIT-E-NOLOAD, Failed to load CITSR software
```

See the Troubleshooting section in the *DEC CIT Server for VMS System Management* manual for more information on the conditions that cause startup to fail.

5.3 Errors During the IVP

If the IVP fails, the system displays the following message:

```
The CITSR IVP has failed
```

Failure of the IVP does not necessarily mean that you have failed to install the DEC CIT Server for VMS software.

If the IVP fails, and you have installed DEC CIT Server for VMS software to support PBX functions, check that the link with the PBX is working.

For example, the following messages may be displayed:

```
      Starting the CITSR V2.1 Installation Verification Procedure

Logical Identifier =    CIT_PBX
Device             =    DSV-0-0
State              =    Synchronizing

The CITSR IVP has failed
```

In this example, the IVP has failed but the installation has been successful. The "Synchronizing" state shows that the link with the server is temporarily unavailable and the DEC CIT Server software is waiting while the link is synchronized and re-established.

Use the following checklist to ensure that the link with a PBX is working:

1. Is the PBX set up to support the link with the VAX server node?
2. Is the cable linking the VAX server node to the PBX connected?
3. Is the communications device on the VAX server node working?
4. Is the appropriate device driver for the communications device installed and working?

If the IVP fails, and you have installed DEC CIT Server for VMS software to support DECvoice functions, check that the DECvoice module was installed correctly and made available to the system, and that the DECvoice IVP was run when the module was installed. See the *DECvoice DTC04 Software Reference Manual* for details of the DECvoice installation procedure and IVP.

The IVP can also fail for one of the following reasons:

- You specify a nonexistent device name or the wrong protocol identifier in step 6 of the installation procedure. This means that the startup profile file CITSR$CP.COM includes the invalid name or identifier, and so the DEC CIT Server for VMS software does not start. If this is the cause of the IVP failure, you must change the invalid device name or protocol identifier in the startup file by running the configuration file CITSR$CONFIG.COM (see Section 4.2).
- You specify an invalid logical identifier to the IVP.

In either case, rerun the IVP following the instructions in Section 4.4.

If the IVP fails for any other reason, refer to the Troubleshooting section of the *DEC CIT Server for VMS System Management* manual before contacting Digital.

5.4 Determining and Reporting Problems

If an error occurs while you are using DEC CIT Server for VMS software and you believe that the error is caused by a problem with CIT software, take one of the following actions:

- If you are within the warranty period or if you have a Software Support Contract that gives you telephone support, contact Digital's Customer Support Center or submit a Software Performance Report (SPR).
- If you have a Self-Maintenance Software Contract, submit a Software Performance Report (SPR).

If you find an error in the DEC CIT Server for VMS software documentation, fill out and submit the Reader's Comments form at the back of the document in which the error was found. Specify the problem, the relevant section, and the page number.

6 EXAMPLE INSTALLATION

This section contains an example installation of DEC CIT Server for VMS software.

Example 1 Example Log File for Server Installation

```
$ @VMSINSTAL CITSR MUA0: OPTIONS N

 VAX/VMS Software Product Installation Procedure V5.2-1
It is 29-OCT-1990 at 16:09.
Enter a question mark (?) at any time for help.
* Are you satisfied with the backup of your system disk [YES]? Y

Please mount the first volume of the set on  MUA0:.
* Are you ready? Y
%MOUNT-I-MOUNTED, CITSR mounted on CITVAX$MUA0:

The following products will be processed:

  CITSR V2.1

 Beginning installation of CITSR V2.1 at 16:10

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

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

    Additional Release Notes Options:
```

Example 1 Cont'd on next page

Example 1 (Cont.) Example Log File for Server Installation

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

* Select option [2]: 4
* Do you want to continue the installation [NO]? Y
%VMSINSTAL-I-RELMOVED , The product's release notes have been successfully
moved to SYS$HELP.


 CITSR Software Installation Procedure.

%VMSINSTAL-I-RESTORE, Restoring product saveset B ...
        Product:      CITSR
        Producer:     DEC
        Version:      2.1
        Release Date: 21-DEC-1990

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


 CITSR configuration procedure.

        You must configure CITSR to define the functions it will
        support - PBX and/or DECvoice.


* Do you want support for PBX functions [YES]? Y
%VMSINSTAL-I-RESTORE, Restoring product saveset C ...

        You must configure CITSR to define your PBX specific protocol
        and the default values for startup.


* Enter the PBX protocol identifier : HCI

* Enter the name of the communications device : DSV-0-0

* Enter the logical identifier for the PBX: CIT_PBX

* Do you want support for DECvoice functions [YES]? Y
%VMSINSTAL-I-RESTORE, Restoring product saveset D ...

* Enter the number of the DECvoice modules CITSR will use [1]: 2

* What is the device name of the DECvoice module ? [VXA0]: VXA0
* Enter logical identifier for the DECvoice module VXA0: VOX_A

* What is the device name of the DECvoice module ? [VXB0]: VXB0
* Enter logical identifier for the DECvoice module VXB0: VOX_B

 Your startup profile has been configured.


* Do you wish to startup CITSR automatically after installation [YES]? Y

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

Example 1 Cont'd on next page

Example 1 (Cont.) Example Log File for Server Installation

```
        You have  answered   all  the  questions  necessary
        for   the   installation   to  be  completed.   The
        installation will now run unattended.

%VMSINSTAL-I-MOVEFILES, Files will now be moved to their target directories...
%VOX-I-STARTUP, the DECvoice "VOX" software startup is executing.
Copr. © Digital Equipment Corp. 1988, 1989. All Rights Reserved.
%LES-S-PROC_ID, identification of created process is 00000033

 Starting the CITSR V2.1 Installation Verification Procedure

    Logical Identifier = CIT_PBX
    Device  = DSV-0-0
    State  = Running

    The CITSR IVP has completed successfully

    The CIT server software has established
    communication to the device shown.


    Logical Identifier  =       VOX_B
    Device              =       VXB0
    State               =       Running

    The CITSR IVP has completed successfully.

    The CIT server software has established
    communication to the device shown.

 CITSR V2.1 Installation Verification Procedure
 completed at 16:21

 Installation of CITSR V2.1 completed at 16:21

 VMSINSTAL procedure done at 16:21
$
```