DNOS Performance Tools Object Installation

Part No. 2302646-9701 **
15 October 1982

READ FIRST

Contents

READ THIS DOCUMENT BEFORE ATTEMPTING TO USE THIS OBJECT KIT. THIS DOCUMENT DESCRIBES THE DNOS PERFORMANCE TOOLS 1.0.0 OBJECT INSTALLATION MEDIA, PART NUMBER 2308847-1601.

TEXAS INSTRUMENTS ASSUMES NO RESPONSIBILITY FOR MODIFICATIONS MADE TO THIS OBJECT KIT.

SECTION 1

Introduction

1.1 GENERAL INFORMATION

This document contains instructions for installing the object of the DNOS Performance Tools. The Performance Tools are software tools that measure and analyze a program's use of time in the central processing unit (CPU). By knowing which portions of a program use the most CPU time, programmers can concentrate on optimizing the code in these areas to reduce the execution time of the program.

The tools in the Performance Tools package fall into two categories:

1. The samplers (PC Sampler and Task Sampler) collect data about the execution of the user's program(s).

2. The analyzers enable the user to format and display the raw data collected by the PC Sampler in various ways.

For further information, refer to the DNOS Performance Tools User's Guide, part number 2302645-9701.

As a precaution, make a copy of the object media before proceeding with the installation. For copy procedures, refer to the Model 990 Computer DNOS Operations Guide, part number 2270502-9701.

All System Command Interpreter (SCI) commands in this document are given in condensed format. You can execute them by entering the command exactly as shown or by using the interactive prompting from the SCI. For a discussion of the condensed command format, refer to the Model 990 Computer DNOS System Command Interpreter (SCI) Reference Manual, part number 2270503-9701.

1.2 MEDIA DEFINITION

Product shipments are made in three formats:

* Disk -- A DS10, DS25, DS50, DS80, DS200, DS300, or

CD1400 disk pack, or a double-sided, double-density diskette that contains the object

* Tape -- An 800 bits per inch (bpi) or 1600 bpi magnetic tape or a cartridge tape (CT) that contains the object

* Add-On -- A disk pack that contains the object and one or more other products

The installation instructions in this document assume that the object files are accessible by a synonym. Section 3 describes how to prepare the media so that you can access the files by a synonym.

1.3 INSTALLATION PROCEDURE

The object media contains the files and batch streams to perform the installation of the DNOS Performance Tools.

1.4 SYSTEM REQUIREMENTS

To successfully perform this installation procedure, you must have a functioning DNOS system, Release 1.1 or later.

The sampler tools require the Model 990/12 Computer. The 990/12 computer contains the 12 millisecond clock hardware used by the Task Sampler and the PC Sampler, the two tools which collect performance data. However, it may be desirable for the user to collect performance data on one system and do the analysis on another. In this case, the system on which the analysis is done does not require a 990/12 CPU, but the Performance Tools must be installed on both systems. This is the only instance in which it is desirable to install the Performance Tools on a system that does not have a 990/12 CPU.

SECTION 2

Performing the Sysgen

2.1 INTRODUCTION

Before the Task Sampler or PC Sampler can be executed, a special SVC must be added to the operating system. This is done by performing a sysgen as described in the following paragraphs.

NOTE

If you are installing the Performance Tools on a system with the intent of only executing the analyzers, then the sysgen step is not necessary. In this case the samplers would be executed on another system.

2.1.1 Sysgen procedure. It is assumed that you already have a DNOS system that executes on your hardware configuration and that you only want to add the special Sampler SVC so you can execute the Performance Tools. If your system includes communication packages (for example, 3270 or 3780) then there are special considerations when performing a sysgen. In this case refer to the object installation guide for the software package(s) that your system includes. For more information on the system generation utility, refer to the Model 990 Computer DNOS System Generation Reference Manual, part number 2270511-9701.

1. Issue the Execute System Generation Utility (XSGU) command.

2. For the DATA DISK/VOLUME prompt, enter the name of the disk volume containing the standard DNOS modules required to configure the new system properly. These modules are initially shipped and stored under the directory .S$OSLINK.S$SGU$. If this directory is still on the system disk, enter the name of the system disk in response to this prompt. If this directory is not on the system disk, it has been backed up on another disk and removed from the system disk to save space. In this case, locate the backup disk, install it, and

enter the name of this disk as your response to DATA DISK/VOLUME prompt.

3. For the TARGET DISK/VOLUME prompt, enter the name of disk drive to which files created by sysgen are to be written. Normally you enter the name of the system disk.

4. For the INPUT CONFIGURATION prompt, enter the name of an existing system on the target disk. The sysgen utility uses this configuration as the starting point. You will add the Sampler SVC to this configuration during the sysgen process and end up with a new configuration.

5. For the OUTPUT CONFIGURATION prompt, enter the name of the new system to be generated. If disk space permits, you should specify a name that is different from the name given for the INPUT CONFIGURATION. This will give you two systems that differ only in that one has the Sampler SVC and the other does not.

6. For the ASSEMBLE AND LINK parameter, enter YES.

7. The sysgen utility then displays the following messages:

```
*** SYSGEN EXECUTION BEGINS ***

*** CONFIGURATION IS NOW BEING READ ***
```

   If the following message appears, disregard it:

```
*** WARNING : THAT ADDRESS HAS BEEN PREVIOUSLY
    DEFINED ***
```

8. Next the sysgen utility displays the prompt ENTITY? Enter SVC as your response.

9. The prompt SVC GROUP NAME? appears. Enter SAMPLER as your response.

10. The prompt SVC GROUP NAME? appears again. Press the RETURN key.

11. The prompt ENTITY? appears. Enter STOP as your response.

12. The prompt BUILD(NO)? appears. Enter YES.

13. The sysgen utility builds the new configuration, catalogs it under the name you specified for OUTPUT CONFIGURATION, and assembles and links the new system.

This can take 30 minutes or more, depending on the system load. During this step the following progress messages appear:

*** CONFIG IS NOW BEING BUILT ***

*** D$SOURCE IS NOW BEING BUILT ***

*** LINKSTREAMS ARE NOW BEING BUILT ***

*** ALGSSTRM IS NOW BEING BUILT ***

BACKGROUND EXECUTION HAS BEGUN:

To check the status of the assemble and link step, use the Show Background Status (SBS) or Wait (WAIT) SCI command. When the assemble and link step is complete, the following message appears:

nn ERRORS ENCOUNTERED IN ASSEMBLING AND LINKING

If nn is not equal to zero, examine the assemble and link batch listing in the file .SSGU.<system name>.ALGSLIST on the disk specified on the TARGET DISK/VOLUME prompt of the XSGU command. Refer to the Model 990 Computer DNOS Messages and Codes Reference Manual, part number 2270506-9701, for an explanation of any errors.

14. Issue the Patch Generated System (PGS) command. For the DATA DISK/VOLUME prompt, enter the same value you entered on the XSGU command. For the TARGET DISK/VOLUME prompt, enter the same value you entered on the XSGU command. For the SYSTEM NAME prompt, enter the same value you entered for the OUTPUT CONFIGURATION on the XSGU command.

15. The PGS command may take 30 minutes or more, depending on the system load. When this step is complete the following message appears:

    nn ERRORS ON DNOS KERNEL PATCH STREAM

    If nn is not zero, examine the batch listing in the file .SSGU.<system name>.PGSLIST on the disk specified on the TARGET DISK/VOLUME prompt of the XSGU command.

16. Issue the Test Generated System (TGS) command to test the new system. For the TARGET DISK/VOLUME and SYSTEM NAME prompts, enter the same value you entered on the PGS command. This command selects the specified system as the system to be used the next time an Initial

Program Load (IPL) is performed on the specified disk. Note that a TGS has effect only the next time an IPL is performed.

17. Perform an IPL on the new system. Once you are convinced that the new system executes correctly, you may want to install it as the primary operating system. To do so, issue the Install Generated System (IGS) command. For the TARGET DISK/VOLUME and SYSTEM NAME prompts, enter the same values you entered on the PGS command.

SECTION 3

Preparing for Installation

3.1 INTRODUCTION

Before installing the Performance Tools package, you must prepare the object files so that the batch stream can access them. The following paragraphs describe how to prepare each media.

3.2 DISK FORMAT

If you receive the object on a disk, perform the following steps to prepare it for installation:

1. Insert the object installation disk in an available disk drive on a functioning DNOS system and prepare it for use.

2. Install the disk by issuing the following command:

   IV U=DSxx, V=PTPINSDN

   where:

   DSxx indicates the disk drive you are using.

Now proceed to Section 4 to install the object.

3.3 MAGNETIC TAPE FORMAT

If you receive the object on a magnetic tape, you must copy the files to a disk as follows:

1. Create a directory on an available disk by issuing the following command:

   CFDIR P=<volume name>.PTPINSDN, M=15

where:

<volume name> is the name (or synonym) of the disk on which the directory is to be created.

2. Mount the magnetic tape on an available tape drive and prepare it for use.

3. Copy the contents of the magnetic tape to the directory you created on the disk <volume name> by issuing the following command:

```
RD S=MTxx, D=<volume name>.PTPINSDN, L=.LISTING
```

where:

MTxx indicates the magnetic tape drive you are using.

The file .LISTING now contains a listing of the directory restored from the magnetic tape. You can examine this file by executing a Show File (SF) or a Print File (PF) command.

4. Unload the tape.

5. Assign the synonym PTPINSDN to the pathname of the restored directory by issuing the following command:

```
AS S=PTPINSDN, V=<volume name>.PTPINSDN
```

where:

<volume name> is the volume name of the disk that received the restored directory.

Now proceed to Section 4 to install the object.

3.4 ADD-ON FORMAT

If you receive the object as an add-on package, use the following steps to prepare it for installation:

1. Insert the disk on which the add-on package was received in an available disk drive on a functioning DNOS system and prepare it for use.

2. Install the disk by issuing the following command:

```
IV U=DSxx, V=<volume name>
```

where:

DSxx indicates the disk drive you are using.

<volume name> is the volume name of the add-on disk.

The volume name is marked on the disk. Also, you can execute a Show Volume Status (SVS) command to obtain the volume name.

3. The add-on package is placed on the disk as a directory. To verify that the add-on directory is on the disk, issue the following command:

```
LD PATH=<volume name>
```

where:

<volume name> is the name of the add-on disk.

The DNOS Performance Tools object is located in the directory <volume name>.PTPINSDN.

4. Assign the synonym PTPINSDN to the directory by issuing the following command:

```
AS S=PTPINSDN, V=<volume name>.PTPINSDN
```

Now proceed to Section 4 to install the object.

SECTION 4

Installing the Object

4.1 INTRODUCTION

This section describes the procedures for installing the DNOS Performance Tools package on your DNOS system.

4.2 INSTALLATION PROCEDURES

Install the object files as follows:

1. Assign the synonym DSC to the system disk on which the Performance Tools package is to be installed by issuing the following command:

   AS S=DSC, V=<volume name>

   where:

   <volume name> is the system disk on which the tools are to be installed.

2. If you intend to execute the sampler tools, issue the following command:

   AS S=SAMPLE, V=YES

   Otherwise, if you intend to run only the analyzers, issue the following command:

   AS S=SAMPLE, V=NO

3. If you want the expanded error message file for the Performance Tools installed on your system disk, issue the following command:

   AS S=EXPMSG, V=YES

   Otherwise, issue the following command:

   AS S=EXPMSG, V=NO

4. Execute the batch stream by issuing the following command:

```
XB I=PTPINSDN.INSTALL, L=.LISTING
```

This process usually takes about three minutes to execute, depending on the system load. To check the status of the batch stream for completion and proper execution, use either the Show Background Status (SBS) or Wait (WAIT) SCI command. The SBS command displays the current execution status. When the batch stream completes, a completion message appears on the screen the next time you press the RETURN key. The WAIT command displays the following message throughout the execution process:

```
--WAITING FOR BACKGROUND TASK TO COMPLETE--
```

When the batch stream completes, messages resulting from internal execution processes are queued. Press the RETURN key to display each message.

When the execution completes, the following message appears:

```
PERF TOOLS PKG INSTALLATION COMPLETE: ERRORS = mm
```

If mm is not equal to zero, examine the batch error listing file (.LISTING) to determine what error(s) occurred. You can ignore the following error codes, which are normal in this batch stream execution:

* 0118 error in a Release LUNO (RL) command
* 0316 error in a Create Directory File (CFDIR) command
* 0315 error in a Delete File (DF) or Modify File Protection (MFP) command
* 1023 error in a Delete Task (DT) or a Delete Procedure (DP) command
* 1029 error in a DT or a DP command

Refer to the Model 990 Computer DNOS Messages and Codes Reference Manual, part number 2270506-9701, for an explanation of any other error code encountered.

5. Perform an initial program load (IPL) on the system after installing the Performance Tools package. This step causes a memory resident procedure used by the PC Sampler to be loaded as memory resident.

NOTE

This step is only necessary if the synonym SAMPLE was set to YES when the installation batch stream was executed.

At this point, the installation is complete. In order to use the SCI commands of the Performance Tools package, you must first issue the following command:

```
.USE .PTP.PROC,.S$CMDS
```

Table 4-1 shows the components of the DNOS Performance Tools package installed on the target disk.

Table 4-1 Installed Files, Directories, Tasks, and Procedures

Component		Description
DIRECTORY:		
DSC.PTP.PROC		Directory containing the special Performance Tools SCI commands.
FILES:		
DSC.S$MSG.PTP		File that contains the error messages for the Graphic Analyzer and Modular Analyzer.
DSC.S$EXPMSG.PTP		File that contains the expanded messages for the Graphic Analyzer and Modular Analyzer.
DSC.PTP.OBJ.DDEBUG		Dummy debug module. This module must be linked into COBOL tasks before they can be run with the PC Sampler.
DSC.PTP.OBJ.RCBTSKDD		Special COBOL runtime module. This module must be linked into COBOL tasks before they can be run with the PC Sampler.
PROGRAM FILE, TASKS:		
DSC.PTP.PROG:	PCSDRV	PC Sampler driver task. (Installed only if value of synonym SAMPLE was YES when installation batch stream was run).
	QPSDRV	Quit PC Sampler driver task.
	GANDRV	Graphic Analyzer task.
	MANDRV	Modular Analyzer task.
	BLDDRV	Control Builder task.
	TSMDRV	Task Sampler driver task.
PROGRAM FILE, PROCEDURES:		
DSC.S$SHARED.LOWCNT		Memory resident procedure used by PC Sampler. (Installed only if value of synonym SAMPLE was YES when installation batch stream was run).