DX10
TI Pascal
Object Installation

READ FIRST

Preface

This manual gives instructions for installing TI Pascal (TIP). The installation procedure requires that you use DX10 System Command Interpreter commands. You can use the DX10 documentation to find information about commands and how to enter them from a terminal.

Before you install Pascal, read this manual to become familiar with the new installation options available to you. Also, read the DX10 TI Pascal Release Information (part number 2268524-9901).

This manual is written for new Pascal customers. If you are not a new customer and are updating to a new version of Pascal, read the Update Document (part number 2239939-9901) accompanying this software kit.

Questions?

The Texas Instruments customer support line (telephone (512) 250-7407) is available to answer your questions about installing and using TI Pascal. You must meet these conditions, however, before you can use the customer support line:

* Texas Instruments supplied your software.

* You did not modify your software.

* You are a Texas Instruments software subscriber.

If you do not meet all these conditions, contact the supplier of your software.

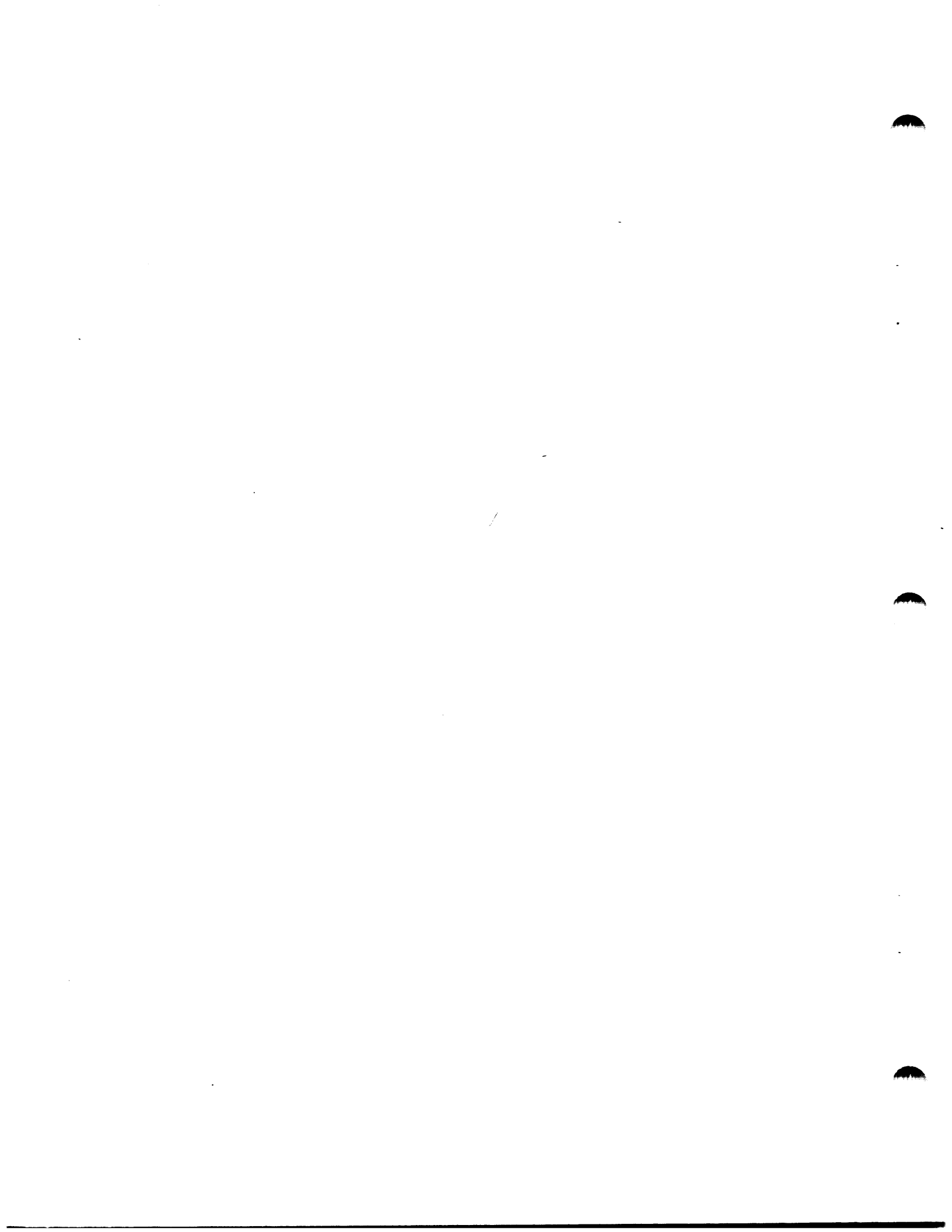We hope that you are pleased with your purchase. As you use TI Pascal, please take a moment to fill out a postage-paid User Response Sheet. User Response Sheets are the last pages in the TI Pascal Reference Manual and the TI Pascal Programmer's Guide. Use these sheets to suggest improvements to our product and our manuals. We try to incorporate our customers' comments into the next releases of our products.

Contents

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+----------------------------------------------------------------+
|                                                                |
| READ   THIS   DOCUMENT   BEFORE ATTEMPTING TO USE THIS OBJECT KIT.|
| THIS DOCUMENT DESCRIBES THE 1.8.0 VERSION OF THE DX10 TI PASCAL|
| OBJECT INSTALLATION MEDIA, PART  NUMBERS  2276496-1601,  -1604,|
| -1605, OR -1606.                                               |
|                                                                |
|                                                                |
| TEXAS  INSTRUMENTS  ASSUMES NO RESPONSIBILITY FOR MODIFICATIONS|
| MADE TO THIS OBJECT KIT.                                       |
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Section 1

Introduction

1.1 GENERAL INFORMATION

Be sure to copy or write protect the installation media. For copy procedures, refer to the DX10 Operating System Operations Guide, Volume II, part number 946250-9702.

Some System Command Interpreter (SCI) commands in this document are given in abbreviated form and may be executed by entering the command exactly as is, or by using the interactive prompting from the SCI. For a discussion of the abbreviated command form refer to the DX10 Operations Guide, Volume II.

1.2 MEDIA DEFINITION

Product shipments of TI Pascal (TIP) are made in three formats:

* Disk -- A disk pack or three double-sided, double-density diskettes that contain the object.

* Magnetic Tape -- A magnetic tape reel that contains the object.

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

The installation instructions in this document assume that the object files are accessible by a synonym. Section 2 describes how to prepare the media so that the files can be accessed by a synonym.

1.3   THE INSTALLATION PROCEDURE

The object media contains the files, batch streams, and SCI commands to perform the following:

* Install the object files

* Verify the installation

1.4   SYSTEM REQUIREMENTS

To successfully perform this installation procedure, you must have a functioning DX10 3.X system.

Section 2

Preparing for Installation

2.1 INTRODUCTION

Before executing the installation procedure, the object files must be prepared so that the installation command can access them. The following paragraphs describe how to prepare each type of media.

2.2 DISK FORMAT

If you receive the Pascal object either on a single disk or on multiple diskettes, you must prepare either type of media, as described in the following paragraphs.

2.2.1 Single Disk

1. Load the installation disk in an available disk drive.

2. Install the disk by issuing the following command:

        IV U=DSxx, V=DXPASCAL

    In this command, DSxx is the disk drive on which DXPASCAL is loaded.

Now proceed to Section 3 for instructions for installing the object.

2.2.2 Multiple Diskettes

1. Load the first installation diskette, volume name DXPASCA1, in an available diskette drive on a functioning DX10 3.X system.

2. Install the diskette by issuing the following command:

        IV U=DSxx, V=DXPASCA1

    In the IV command, DSxx is the disk drive on which DXPASCA1 is loaded.

Now proceed to Section 3 for instructions for installing the object.

2.3 MAGNETIC TAPE FORMAT

If you receive the object on a magnetic tape, you must first move the files to a disk before beginning the installation process. To accomplish this task, perform the following steps:

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

        CFDIR P=volname.DXPASCAL, M=20

    In this command, volname is the name of the disk on which the directory is created.

2. Load the magnetic tape on an available tape drive.

3. Move the contents of the magnetic tape to the directory you created by issuing the following command:

        RD S=MTxx, D=volname.DXPASCAL, L=.LISTING,

    In this command, volname is the name of the disk that receives the restored directory. 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 DXPASCAL to the pathname of the restored directory by issuing the following command:

        AS S=DXPASCAL, V=volname.DXPASCAL

    In this command, volname is the volume name of the disk that receives the restored directory.

Now proceed to Section 3 for instructions for installing the object.

2.4 ADD-ON FORMAT

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

1. Load the disk containing the add-on package in an available disk drive.

2. Install the disk by issuing the following command:

    IV U=DSxx, V=volname

    In this command, DSxx is the disk drive on which the volume is loaded and volname is the volume name of the add-on disk. The volume name is marked on the disk or you can execute a Show Volume Status (SVS) command to obtain the volume name.

3. Assign the synonym DXPASCAL to the Pascal object directory by issuing the following command:

    AS S=DXPASCAL, V=volname.DXPASCAL

Now proceed to Section 3 for instructions for installing the object.

Section 3

Installing the Object

3.1   INTRODUCTION

The TI Pascal object media contains both the object files and the batch stream necessary to install Pascal on a DX10 3.X system. Before you install Pascal, you need to consider Pascal's disk space requirements. Pascal requires a certain amount of disk space for installation.

A disk requires about 2000K bytes of space to hold the entire Pascal package. Use an SVS command to find the amount of space available on your system disk. Multiply the value of BYTES/ADU by the value of AVAILABLE (avaliable ADUs) to estimate the number of bytes available on the disk.

To hold the Pascal compiler, a disk requires about 900K bytes of space (1K equals 1024).

Pascal can be installed using any of the following three configurations. The configuration you use depends on the amount of space available on the system disk.

   *   If 2000K bytes are available on the system disk, you can install the entire Pascal package on the system disk.

   *   If 2000K bytes are not available on the system disk, but at least 900K bytes are available, you can install the compiler on the system disk and leave the run-time support on the installation disk or put it on a secondary disk.

   *   If less than 900K bytes are available on the system disk, you must leave the entire package on the installation disk or install the package on a secondary disk.

You can choose which of these configurations to use by responding to the appropriate installation command prompts, as discussed in the following paragraphs.

3.2   INSTALLING PASCAL

The following instructions describe how to install Pascal on the
system disk or a secondary disk. They also tell how to install
Pascal and leave the compiler or run time on the installation
disk. The installation process performs the following:

*   Automatically deletes any previously installed version
    of Pascal.

*   Installs the Pascal compiler, error message files, run-
    time support library, support utilities, and SCI
    procedures.

*   Generates an output file that you can examine to ensure
    that Pascal is properly installed.

3.2.1   Installation Procedure
To install Pascal, perform the following steps:

1. When you use a secondary disk to hold the compiler or
    run time, load the disk in an available drive and
    install it by issuing the following command:

        IV U=DSxx, V=volname

    In this command, DSxx is the disk drive in which the
    secondary disk is loaded, and volname is the volume
    name of the secondary disk.

2. Access the installation command procedures library by
    issuing the .USE primitive, as follows:

    a. If you receive the object on a single disk or a
        tape, issue the .USE primitive as follows:

            .USE DXPASCAL, .S$PROC

    b. Otherwise, if you received the object on
        diskettes, enter the .USE primitive as follows:

            .USE DXPASCA1, .S$PROC

The following menu should appear:

```
┌─────────────────────────────────────────────────┐
│                                                  │
│        DX10 TI PASCAL 1.8.0. INSTALLATION        │
│                                                  │
│                                                  │
│       INSTALL  -  INSTALL TI PASCAL              │
│                                                  │
│       VERIFY   -  VERIFY THE INSTALLATION        │
│                                                  │
│                                                  │
└─────────────────────────────────────────────────┘
```

The installation library contains two SCI
commands, one to install Pascal (INSTALL) and one
to verify the installation (VERIFY).

3. Install Pascal by entering the INSTALL command and
   answering the prompts, as follows:

   [ ]INSTALL

   INSTALL TI PASCAL <VERSION 1.8.0 YYDDD>
        COMPILER TARGET VOLUME: volname
        RUN TIME TARGET VOLUME: volname
                   SYSTEM DISK: volname
   SUPPORT FIXED AND DECIMAL?: {YES/NO}   (YES)
   INSTALLATION BATCH LISTING: pathname   (.LISTING)
   INSTALLING FROM DISKETTES?: {YES/NO}   (YES)

   COMPILER TARGET VOLUME
        Enter the name of the disk volume where you want
        to install the Pascal compiler program file. If
        you press the Return key without entering anything
        (null response), the installation procedure
        installs the compiler on the system disk. Enter
        DUMY if you wish to leave the compiler on the
        installation disk.

RUN TIME TARGET VOLUME
     Enter the name of the disk where you want to
     install the Pascal run-time support libraries. If
     you enter the null response, the installation
     procedure installs the run-time object files on
     the system disk. Enter DUMY if you wish to leave
     the run time on the installation disk.

SYSTEM DISK
     Enter the name of the system disk that will be
     installed when you execute the Pascal compiler.
     The installation procedure installs the compilers
     SCI procedures and error message files on this
     disk. If you wish to use the current system disk,
     enter the null response.

SUPPORT FIXED AND DECIMAL?
     At your option, you can install support for FIXED
     and DECIMAL arithmetic. Enter YES to merge the
     FIXED and DECIMAL support with the rest of the
     run-time object library (on the run-time target
     volume). If you do not require FIXED or DECIMAL
     support, enter NO to leave these object modules on
     the installation disk.

INSTALLATION BATCH LISTING
     Enter the name of the file where you want to send
     the installation batch stream listing.

INSTALLING FROM DISKETTES?
     If you recieve the Pascal object on diskettes,
     enter YES. Otherwise, enter NO. If you enter
     YES, the following prompt will appear:

          INSTALL TI PASCAL FROM MULTIPLE DISKETTES
          WHICH DISKETTE (1,2,3)?: integer

     In response to the prompt, enter the number of the
     diskette that you installed. DXPASCA1 is 1,
     DXPASCA2 is 2, and DXPASCA3 is 3.

After you respond to the prompts, the INSTALL command
executes the installation batch stream. A message
appears, indicating that the installation is in
progress. Installation normally takes about thirty
minutes. During this time, you may wish to check the
status of the installation batch stream for completion
and proper execution. Execute the SCI command Show
Background Status (SBS) or Wait (WAIT) to have SCI
notify you when the batch stream completes, or enter
the Show File (SF) command to examine the file whose
name you entered in response to the INSTALLATION BATCH
LISTING prompt.

When the installation batch stream finishes, this message appears on the console:

TIP INSTALLATION COMPLETED WITH n ERRORS

If there are errors in the batch execution, examine the batch listing to determine the error. The following error codes are normal and should be ignored.

* 0026 error in a Create Directory File (CFDIR) command.

* 0027 error in a Delete Directory (DD) command.

* 0021 error in a Modify File Protection (MFP) command.

* 0027 error in a Modify File Protection (MFP) command.

* 0001 error in a Release Global LUNO (RGL) command.

If you are installing Pascal from diskettes, issue the .USE primitive to return to the default DX10 menu, as follows:

.USE

Unload DXPASCA1 and load the second diskette, DXPASCA2 (refer to paragraph 2.2.2 for instaructions on how to load and install diskettes). Access the installation command procedures by issuing the .USE primitive, as follows:

.USE DXPASCA2, .S$PROC

Execute the INSTALL command again, this time answering YES to the INSTALLING FROM DISKETTES prompt and 2 to the WHICH DISKETTE (1,2,3)? prompt. When the installation batch stream finishes, issue the .USE primitive to return to the main DX10 menu, as follows:

.USE

Unload DXPASCA2. Repeat the loading and installation process again for the third diskette, DXPASCA3.

3.2.2 Global LUNO 021

You need to assign global LUNO >21 to the Pascal program file. You must assign this LUNO each time you use Pascal, or you can have it assigned during the log-on procedure. To have the log-on procedure assign the LUNO automatically, edit the Initialize System command procedure and insert the following lines:

```
AGL  L=>21,AN=.TIP.PROGRAM,P=YES
MLP  P=P,L=>21
```

If global LUNO >21 is already being used for some dedicated purpose, you must change the Pascal procedures to use another LUNO. To change the global LUNO used by Pascal, edit the installation files DXPASCAL.PROCS, DXPASCAL.INSTALL, DXPASCAL.TIP.TIPBATXS, DXPASCAL.TIP.TIPBATXT, and DXPASCAL.TIP.TIPBATXL to replace all occurrences of the string >21 or 021 with an available LUNO. After you edit the files, you can install Pascal.

The following components of the Pascal object are installed on the target disks during installation:

Run-time object libraries:
  RTLVOL.TIP.
    LUNOBJ   Alternate versions for use without SCI
    MINOBJ   Minimal run-time
    OBJ   Standard run-time
    MISC   VDT and KIF routines

Miscellaneous files:
  SYSVOL.TIP.CFGERR   Error messages for configuration
                                processor
  SYSVOL.TIP.ERRORS   Error messages for compiler
  CMPVOL.TIP.TIPBATXL   Control stream for background XTIPL
                                procedure
  CMPVOL.TIP.TIPBATXS   Control stream for background XSILT
                                procedure
  CMPVOL.TIP.TIPBATXT   Control stream for background XTIP
                                procedure

Program file tasks in CMPVOL.TIP.PROGRAM

ID	Name	Description
01	SILT1	Parser -- First pass of compiler
02	SILT2	Semantic processor -- Second pass of compiler
03	CODEGEN	Code generator -- Fourth pass of compiler
04	CONFIG	Configuration processor
05	NESTER	Source program reformatting utility
06	SPLITOBJ	Object module split utility
07	RASS	Reverse assembler
09	SPLITPGM	Source module split utility
OB	P$DELETE	Delete temporary files
OD	T9OPT	Optimizer -- Third pass of compiler
OE	EXTRACT	Assembly language extractor
OF	PSCLXREF	Cross-reference utility
12	PREPROC	Preprocessor utility

SCI procedures:
  SYSVOL.S$PROC.

M$TIP	Menu
MODE$$	Select Execution Mode
P$DELETE	Delete temporary files
P$INIT	Initialize temporary file directory
P$SYN	Delete synonyms
SPID	Show Pascal version ID
TIP$MSG	Display message file on screen
XALX	Execute assembly language extractor
XCODE	Execute code generator
XCONFIG	Execute configuration processor
XCONFIGI	Execute configuration processor interactively
XNESTER	Execute source reformatter utility
XP$2	Process options for preprocessor and compiler
XPP	Execute preprocessor
XPT	Execute a Pascal task
XPX	Execute cross-reference utility
XR$1	Test option parameter for foreground option
XRASS	Execute reverse assembler
XSILT	Execute syntax check portion of compiler
XSPLIT	Execute object split utility
XSPLITPG	Execute source program split utility
XTIP	Execute compiler
XTIPL	Execute compiler and link editor

If you wish to delete the installed components from your system,
use the MFP, Delete File (DF), DD, DT, or Delete Procedure (DP)
commands, as appropriate, to remove the components listed in the
preceding.

If you wish to verify that the installation was successful,
proceed to Section 4 for instructions on how to execute the
VERIFY command.

Otherwise, return to the default command menu by entering the
.USE primitive:

    .USE

If you received the Pascal object on a disk, and you did not
leave the compiler or the run time on the installation disk,
unload the disk by issuing this command:

    UV VOLUME NAME=volname

In the UV command, volname is the name of the object installation
disk (DXPASCAL a single disk, or DXPASCA3 for a diskette).

Section 4

Verifying the Installation

The Pascal installation disk provides a command you can use to
test whether the Pascal object files are properly installed. The
command executes a batch stream that performs the following:

* Compiles a test Pascal program

* Exercises the nester, split program, configuration
  processor, reverse assembler, assembly language
  extractor, and split object utilities.

* Link edits the test program

* Executes the test program

NOTE

This test assumes that the Pascal SCI
procedures are installed on the current
system disk. Therefore, this test cannot
execute if you named a secondary disk as the
system disk when you installed Pascal.

1. To test Pascal, execute the VERIFY SCI command, as
   follows:

       [ ]VERIFY

       VERIFY TI PASCAL INSTALLATION
            OUTPUT FILE DIRECTORY: pathname
             BATCH STREAM LISTING: pathname   (.LISTING)
       INSTALLING FROM DISKETTES?: {YES/NO}   (YES)

Respond to the prompts as follows:

OUTPUT FILE DIRECTORY
   Enter the name of the directory that is to hold
   the files and the listings that the test program
   uses. If you create the directory, allow 30
   entries. If you do not create the directory, the
   VERIFY command creates it for you.

BATCH STREAM LISTING
   Enter the pathname of the file that is to hold the
   batch stream listings.

INSTALLING FROM DISKETTES?
   If you received the Pascal object on diskettes,
   enter YES. Otherwise, enter NO. If you enter
   YES, make sure that the diskette named DXPASCA3 is
   installed.

2. After you enter the command, the following message
   appears:

   BEGIN TI PASCAL VERIFICATION TEST

3. The test batch stream executes for about 10 minutes.
   You can use the SBS or WAIT commands to have SCI notify
   you when the tests complete. Also, you can use the SF
   command to inspect the file whose name you entered in
   response to the BATCH STREAM LISTING prompt of the
   VERIFY command.

4. When the test completes, a message appears, indicating
   whether the tests were successful. If the tests fail,
   check the file whose name you mentioned in response to
   the BATCH STREAM LISTING prompt to determine the cause
   of the failure.

5. Return to the default command procedure library by
   issuing the .USE primitive:

       .USE

6. If you received the object files on a disk, and you did
   not leave the compiler or run time on the disk, you can
   unload the volume by issuing the UV command:

       UV VOLUME NAME=volname

   In the UV command, volname is the name of the
   installation disk (DXPASCAL if you received the object
   on a single disk, or DXPASCA3 if you received the
   object on diskettes).