# TOPS-20
# KL Model B Installation Guide

AA–M229B–TM

**September 1985**

This manual describes the procedures for installing TOPS–20
Version 6.1 on a new system and updating TOPS–20 software
on an existing KL10 Model B system.

Change bars in the margins indicate material that has been
added or changed since the previous printing of this manual.
Bullets indicate that material has been deleted.

This manual supersedes the manual of the same name and
order numbers, AA–M229A–TM and AA–M229A–T1. Please
read it in its entirety.

**OPERATING SYSTEM:** TOPS–20 V6.1

**SOFTWARE:** RSX–20F V15–21
KLINIT V15–15
Microcode V407

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

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PREFACE


The TOPS-20 KL Model B Installation Guide describes the procedures for
installing TOPS-20 software on a new DECSYSTEM-20. This guide also
provides information on updating TOPS-20 software on an existing KL10
Model B system, installing TCP/IP-20 (Transmission Control
Protocol/Internet Protocol), and generating tailored GALAXY software.


AUDIENCE

This guide addresses TOPS-20 operators, system managers, and others
who have the responsibility to:

- Install the TOPS-20 software on a new DECSYSTEM-20.

- Update the TOPS-20 software on an existing DECSYSTEM-20.

- Install TCP/IP-20 software.

- Generate a tailored batch and spooling (GALAXY) system.


ORGANIZATION

Chapter 1       describes what you need to do to prepare for
                installation. It also describes the tools you need to
                install the software.

Chapter 2       describes powering up the DECSYSTEM-20 and obtaining
                the DECSYSTEM-20 front-end monitor from floppy disk.
                This chapter also describes loading the TOPS-20 bundled
                software from magnetic tape.

Chapter 3       describes how to select the proper monitor, declare the
                system name, and change the system defaults for
                terminals, system devices, accounting, performance
                improvements, scheduler controls, file archiving and
                migration, and other system functions.

Chapter 4       describes how to create the front-end file system for
                the DECSYSTEM-20 and copy files into it from the floppy
                disks. (When you finish this chapter, the installation
                is complete.)

Chapter 5        describes how to boot the system from disk.

Chapter 6        describes how to install TOPS-20 Distribution, Update,
                 and Tools tapes.

Chapter 7        describes how to run the User Environment Test Package
                 (UETP program). This program performs a cursory check
                 of the system.

Appendix A       contains step-by-step instructions, with pointers to
                 various chapters within this guide, describing how to
                 update a TOPS-20 software system on the DECSYSTEM-20.

Appendix B       is a pocket installation guide for the experienced
                 installer. It contains the text and output from a
                 sample installation of the TOPS-20 software on a
                 DECSYSTEM-20, Model 2060. (This appendix does not have
                 error recovery procedures.) The steps are keyed to the
                 steps within the body of this guide that describe how
                 to install the TOPS-20 software on a new DECSYSTEM-20.

Appendix C       contains the steps for installing TCP/IP-20, with
                 pointers to various chapters within this guide.

Appendix D       contains the steps for generating a batch and spooling
                 (GALAXY) system tailored for your particular site.


RELATED DOCUMENTS

The following manuals are valuable as references while using this
guide. All of these manuals are included in the TOPS-20 Software
Notebook Set.

        TOPS-20 Commands Reference Manual

        TOPS-20 EDIT Reference Manual

        TOPS-20 Monitor Calls Reference Manual

        TOPS-20 Operator's Guide

        TOPS-20 Operator's Command Language Reference Manual

        TOPS-20 System Manager's Guide

        TOPS-20 User's Guide

        TOPS-20 User Utilities Guide


USING RECOGNITION INPUT

TOPS-20 offers a helpful feature to prompt you when you type a
command. Simply type the first few characters, and then press the
ESCape key. This tells TOPS-20 to examine the characters you typed
and to complete the command for you. If TOPS-20 recognizes the
characters you typed, it completes as much of the command as it can.
When it cannot print any more or does not recognize the characters you

typed as part of a valid command, TOPS-20 rings the terminal bell
(your terminal bell may be a buzzer) and waits for you to type
additional characters. If you type part of a command that means more
than one thing to TOPS-20, it rings the terminal bell to indicate that
it needs more information. Using the ESCape key in these ways is how
you use the TOPS-20 feature called recognition input.

When you use recognition input, TOPS-20 also prints some words in
parentheses. These words, called guidewords, make the command more
readable and also tell you what kind of argument TOPS-20 expects you
to type.

In this guide, commands are shown as complete words followed by the
appropriate arguments. For example:

        $BUILD PS:<OPERATOR> <RET>

If you use recognition input for this command, it looks like this:

        <ESC>
          |
        $BUILD (DIRECTORY NAME) PS:<OPERATOR> <RET>

Using recognition input provides the guidewords (DIRECTORY NAME).

Here is another example:

        $COPY PS:<SYSTEM>FILE.CMD PS:<OPERATOR>FILE.CMD <RET>

Using recognition input, the command looks like this:

        <ESC>                      <ESC>
          |                          |
        $COPY (FROM) PS:<SYSTEM>FILE.CMD (TO) PS:<OPERATOR>FILE.CMD <RET>

If you type accurately, the command lines shown in this guide will be
accepted and interpreted correctly by TOPS-20. If you choose, you can
use recognition input. In most cases, if you press the ESCape key
after you type a command or an argument, TOPS-20 will provide
guidewords or instruct you to press the RETURN key.

Recognition input offers several advantages. First, you can
double-check your typing, because the completed command as printed by
TOPS-20 verifies that your typing has been interpreted correctly.
Second, you can minimize typing, because you need only type enough
characters to make a unique match with a command or argument. And
third, TOPS-20 prompts your next response, because it prints
guidewords in parentheses.


HOW TO USE THIS GUIDE

Before using this guide, read Getting Started With TOPS-20. Also be
familiar with the information in the TOPS-20 User's Guide, the TOPS-20
System Manager's Guide, and the TOPS-20 Operator's Guide.

If you are installing a new system, read Chapters 1 through 7. If you
are updating an existing TOPS-20 system, read Appendix A. If you are
installing a system with TCP/IP capability, read Appendix C. If you
are generating a tailored GALAXY, read Appendix D.

The following conventions are used in this guide:

| Symbol | Indicates |
|--------|-----------|
| <RET> | The RETURN key. |
| <ESC> | The ESCape (ESC, ALT, ALTMODE, or PREFIX) key. |
| $ | The ENABLEd prompt or the echo of the ESCape key. |
| $$ | The subcommand prompt. |
| <CTRL/\> | Pressing the CTRL (CONTROL) key and the backslash key simultaneously. The backslash key is located near the key labeled LINEFEED or LF on your console terminal (CTY). |
| <CTRL/x> | Pressing the CTRL (CONTROL) key and another key simultaneously. |
| ^x | The echo of <CTRL/x>. For example, pressing <CTRL/Z> echoes as ^Z. Note that pressing <CTRL/x> does not always echo with ^x on your terminal. For example, <CTRL/\> has no echo. |
| @ | The TOPS-20 prompt. |
| UPPERCASE | Actual input required in a command string. You must type an uppercase element in full or with an abbreviation acceptable to the system. |
| lowercase | An input variable in a command string (for example, name or number). These are variables that you must determine. |
| Spaces | Separate elements of a command. Spaces must be input where shown. |
| { } | A list of alternatives within a command. You must specify one of the alternatives in your command string. Do not type braces in the actual command string. |
| . . . | That some of the lines in the example or figure are not shown. |
| Bold Print | What you type at your terminal (in either uppercase or lowercase characters). |
| Regular Print | What the system prints or displays at your terminal (in either uppercase or lowercase characters). |

x

The commands you must type are in **bold print**. If you type accurately, all you have to do is perform the indicated function and verify that your actual terminal output resembles the sample output. Be sure to include the spaces shown in the command lines. Remember that systems differ in memory size and peripherals, so steps that describe configuring memory, initializing line printers and disk packs, and assigning logical unit numbers to tape drives, require you to type the values that are correct for your system and not the sample parameters.

If your terminal output does not resemble the sample output, first read ALL of the instructions after the word "Error," then choose the recovery procedure that corrects your problem.

NOTE

The version and edit numbers in this guide could differ from those printed on your console terminal. The numbers printed on your console must be equal to or greater than the numbers in this guide.

Time estimates are included so that you know <u>about</u> how long a step takes. Times are estimated to the nearest minute, so don't worry if a step takes somewhat longer or shorter than this.

# CHAPTER 1

## INTRODUCTION

This introductory chapter describes collecting information before you start an installation, what tools you will need, the monitors available to you, and information on GALAXY.

When installing the TOPS-20 software on a DECSYSTEM-20 model number 2060 or on a DECSYSTEM-20 model number 2040S, you should be using software package QT023, which contains the Installation tape and the Distribution tape. (The installation of a DECSYSTEM-20 Model 2065 is identical to that of a DECSYSTEM-20 Model 2060. Throughout this guide, Model 2060 will be used to designate both Model 2060 and 2065.)

> **NOTE**
>
> Before starting the installation, read the listing labeled TOPS20.BWR, which accompanies your software. The TOPS20.BWR file describes changes in the software and installation procedures made too late for inclusion in this guide.

## 1.1  COLLECTING INFORMATION

A DIGITAL Field Service Representative will install your DECSYSTEM-20 hardware and inform you when the system runs diagnostics correctly. Before he leaves, you need to obtain the following information:

- The channel, unit, and controller number of each disk drive.

- A list of terminal line numbers and line speeds.

- The serial number of each magnetic tape drive.

- The unit number and type of each line printer.

### 1.1.1  Disk Drives

You need to know the channel, unit, and controller number of each disk drive, and whether it is dual-ported. The controller number for an RP04, RP06, and RP07 is -1. The controller number for both an RA60 and RA81 is 7. RP20 disk drives have a different controller number. The unit number is located on the display panel on the drive.

The DECSYSTEM-20 dual-ported disk drives are connected to both the CPU and the front-end processor. In a common file system (CFS) environment, dual-ported disks may be connected to another

| DECSYSTEM-2Ø. When doing an installation, these disks should be
| ported to one system or the other. It is an error if two dual-ported
| drives with the same unit number are connected to the front-end
| processor. Remember that it is possible for RPØ4, RPØ6, and RPØ7
| disks to be dual-ported to two different channels on the same system.
| The procedures in this guide assume that the unit on which you are
| installing the front-end software is Unit Ø. Use the following chart
| to record the necessary information.

## Disk Drives

| Type | Channel # | Unit # | Controller # | Dual-Ported ? |
|------|-----------|--------|--------------|---------------|
| ---- | --------- | ------ | ------------ | ------------- |
| ---- | --------- | ------ | ------------ | ------------- |
| ---- | --------- | ------ | ------------ | ------------- |
| ---- | --------- | ------ | ------------ | ------------- |
| ---- | --------- | ------ | ------------ | ------------- |
| ---- | --------- | ------ | ------------ | ------------- |
| ---- | --------- | ------ | ------------ | ------------- |
| ---- | --------- | ------ | ------------ | ------------- |
| ---- | --------- | ------ | ------------ | ------------- |
| ---- | --------- | ------ | ------------ | ------------- |

### 1.1.2 Terminal Lines

You need a list of terminal line numbers and line speeds. Use these
numbers in Section 3.3.1 when you set the default terminal speeds.
Also, find out which lines are remote so that you can define the
| remote lines as described in Section 3.3.2. Use the following chart
| to record this information.

## Lines

| Line # | Auto Speed | Remote? | Line # | Auto Speed | Remote? |
|--------|-----------|---------|--------|-----------|---------|
| ------ | ----- | ------- | ------ | ----- | ------- |
| ------ | ----- | ------- | ------ | ----- | ------- |
| ------ | ----- | ------- | ------ | ----- | ------- |
| ------ | ----- | ------- | ------ | ----- | ------- |
| ------ | ----- | ------- | ------ | ----- | ------- |
| ------ | ----- | ------- | ------ | ----- | ------- |
| ------ | ----- | ------- | ------ | ----- | ------- |

# INTRODUCTION

## NOTE

The word Auto over the word Speed declares that the line is an autobaud line (see Section 3.3.2).

### 1.1.3 Magnetic Tape Drives

You need to know the serial number of each magnetic tape drive. Use these numbers in Section 3.3.4 to define magnetic tape logical unit numbers. The number appearing on the thumbwheel does <u>not</u> necessarily correspond to the logical unit number of the drive. Use the following chart to record this information.

#### Magnetic Tapes

| Serial # | Type | Serial # | Type | Serial # | Type |
|----------|------|----------|------|----------|------|
| -------- | ---- | -------- | ---- | -------- | ---- |
| -------- | ---- | -------- | ---- | -------- | ---- |
| -------- | ---- | -------- | ---- | -------- | ---- |
| -------- | ---- | -------- | ---- | -------- | ---- |
| -------- | ---- | -------- | ---- | -------- | ---- |
| -------- | ---- | -------- | ---- | -------- | ---- |

## NOTE

The serial numbers on TU70 and/or TU71 tape drives are made up of three factors. These factors consist of the RH20 channel number, the DX20 number, and a two-digit tape unit number. Assuming that the RH20 channel number is 2, the serial number for tape unit 3 would be 2003. In this example, the RH20 channel is the first digit (2), the DX20 number is the second digit (0), and the last two digits are the tape unit number (03). The serial number for a TU72 tape drive can be found on the back of the tape drive.

### 1.1.4 Line Printers

You need the unit number and type of each line printer. Use this information in Section 3.3.5 to initialize the line printers. Use the following chart to record this information.

#### Line Printers

| Unit # | Model # | Lowercase ? | Programmable VFU ? |
|--------|---------|-------------|--------------------|
| ------ | ------- | ----------- | ------------------ |
| ------ | ------- | ----------- | ------------------ |
| ------ | ------- | ----------- | ------------------ |

## 1.2  INSTALLATION TOOLS

You need the following tools to install the TOPS-20 software on a DECSYSTEM-20:

- The TOPS-20 RSX-20F Version 15-21 System Floppy A.

- The TOPS-20 RSX-20F Version 15-21 System Floppy B.

- The TOPS-20 RSX-20F Version 15-21 System Floppy C.

- The TOPS-20 Version 6.1 Installation tape.

- The TOPS-20 Version 6.1 Distribution tape.

- A separate tape for each optional software product you have purchased.

- Formatted disk packs. (If your disk packs are not formatted, ask your DIGITAL Field Service Representative to format them for you.)

RP20 Disks

If you are installing the TOPS-20 software on a DECSYSTEM-20, Model 2040s or 2060, that contains an RP20 disk subsystem, be sure you have Floppy C, as this floppy disk contains the microcode necessary to boot the RP20.

### 1.2.1  Floppy Disks

System Floppy A contains the files to boot the central processor from an RP04 or RP06 disk pack.

System Floppy B contains the files for various functions used to install and maintain the software on a DECSYSTEM-20.

System Floppy C contains the RSX-20F Version 15-21 map file and the RP20/DX20 microcode files.

### 1.2.2  Tapes

The TOPS-20 Installation tape, for DECSYSTEM-20s Models 2040S and 2060, contains the TOPS-20 monitor and related programs. The files are:

- The TOPS-20 monitor (SAVE format)

- The TOPS-20 command processor (SAVE format)

- The DLUSER program (SAVE format)

- DLUSER data (ASCII file)

- The DUMPER program (SAVE format)

- Four DUMPER savesets recorded at 1600 bpi in DUMPER format for the following directories:

    - PS:<SYSTEM> for the monitor and related programs.

    - PS:<SUBSYS> for the system program files and the GALAXY files.

    - PS:<UETP.LIB> for the UETP files.

The TOPS-20 Distribution tape for all DECSYSTEM-20s contains the TOPS-20 bundled software. There are four DUMPER savesets recorded at 1600 bpi in DUMPER format.

- Saveset 1 contains documents about the software.

- Savesets 2 through 4 contain source files needed to build the software in the directories <SYSTEM> and <SUBSYS>, except for the monitor and the TOPS-20 command processor.

NOTE

The term "bundled software" refers to the contents of the Installation and Distribution tapes considered together, or to the contents of the Distribution tape alone. The term "unbundled software" refers to the contents of the tapes for optional software products.


## 1.3 THE TOPS-20 MONITORS

Two monitors are distributed with the TOPS-20 software for the DECSYSTEM-20, Models 2040S and 2060. They are:

    2060-MONBIG.EXE

    2060-MONMAX.EXE

Read Chapter 3 for descriptions of these monitors. The installation will proceed more smoothly if you take time now to choose the monitor you want to use.


## 1.4 THE BATCH AND SPOOLING SYSTEM

Your TOPS-20 software system initialization includes a standard GALAXY batch and spooling system. If you need a special batch and spooling system, first install the standard system; then refer to Appendix D of this manual for instructions on how to build your own specialized batch and spooling system.

# CHAPTER 2

## CREATING THE TOPS-20 FILE SYSTEM

This chapter describes how to create a new TOPS-20 file system on the DECSYSTEM-20. To create a new file system, you must load and start the TOPS-20 monitor, initialize the file system, restart the monitor, and restore the bundled software from tape.

STOP: These Procedures Install a New System

>Follow the procedures in this chapter if you are installing TOPS-20 software on a new system, or if you are creating a new file system on a set of disk packs. Use Appendix A to update TOPS-20 software on an existing system.

### 2.1 CHECKING THE TOPS-20 SOFTWARE PACKAGE

The TOPS-20 software package contains the following items:

1. The TOPS-20 RSX20F Version 15-21 System Floppy A.

2. The TOPS-20 RSX20F Version 15-21 System Floppy B.

3. The TOPS-20 RSX20F Version 15-21 System Floppy C.

4. The TOPS-20 Installation Tape Version 6.1.

5. The TOPS-20 Distribution Tape Version 6.1.

6. A separate tape for each optional software product purchased.

Be sure that you have all of these items. Refer to Chapter 1, Sections 1.2.1 and 1.2.2 for the contents of the floppy disks and magnetic tapes.

### 2.2 PREPARING THE DECSYSTEM-20 FOR INSTALLATION

You prepare the system for installation by powering it up, checking for formatted disks, and labeling the disk packs. You then mount the disk packs and turn on the disk drives; mount the floppy disks; and mount the Installation tape.

Perform Steps 1 through 9 to prepare for installation.

➡ Step 1:   Read the listing labeled TOPS2Ø.BWR.

Read the listing labeled TOPS2Ø.BWR to learn about any last minute
changes made to the installation procedure or to the TOPS-2Ø software.


➡ Step 2:   Ask your DIGITAL Field Service Representative if the disk
            packs are formatted.

Ask your DIGITAL Field Service Representative if the disk packs are
formatted for use with the DECSYSTEM-2Ø.  If they are not, ask him to
format them.  The packs must be formatted before you proceed further.
| Note that you cannot use an RP2Ø for the system structure.


➡ Step 3:   Power up the system.

Turn on the power by pressing the POWER switch if the light under the
word POWER on the operator's panel is off.  (Do not touch the
emergency power switch unless you see smoke or sparks coming from the
system.)  The system is ready after a few seconds, and the power light
comes on.

Be sure that the system is completely powered on:

    1.   Check the disk drives.

    2.   Check the magnetic tape drives.  If power is off, press the
         rocker switch (the white switch containing the ON/OFF light)
         on the front panel.  If you have trouble with the disk drives
         or magnetic tape drives, call your DIGITAL Field Service
         Representative for assistance.

    3.   Check the line printers.  If power is off for an LP2ØA or
         LP2ØB printer (which has four buttons on the right of the top
         panel), reset the knee-level breaker on the lower panel.  The
         TAPE light may be on; disregard it.  If you have an LP2ØF or
         LP2ØH printer (which has four rocker switches on the left of
         the top panel), lift the cover just above the lights and
         reset the breaker.  Be sure that the printer has paper.

    4.   Turn on the console terminal (CTY).  Be sure that it is on
         line and has paper.


➡ Step 4:   Label the disk packs.

This guide contains the procedures for creating the system structure
for your system.  The system structure name can be up to six
characters and contains the files needed to run the system.  The
| system structure cannot include RP2Ø, RA81, or RA6Ø disk drives.  If
the system structure is on an RPØ7 disk drive, the front-end file
system must reside on a RPØ4 or RPØ6 dual-ported disk drive.

Decide how many packs you will have, and assign them consecutive
"logical unit numbers," starting with Ø.  These are the logical pack
numbers referred to in Step 25.  Identify each pack by writing these
numbers with a felt-tip pen on the pack cover with a gummed label.  A
sample of the format of the label is:

    TOPS-2Ø Disk Pack
    Structure ID:   structure name
    Logical Unit:   n

CAUTION

Do not use a gummed label on the surface of the pack
itself, because it can spin off and cause severe
damage to the drive.

**Step 5:    Mount the RP04 or RP06 disk pack.**

Mount the disk packs on the proper drives.  RP04 and RP06 disk packs
are similar in appearance but can be distinguished by the name RP04 or
RP06 written on the upper surface of the pack.  Make sure you place
one  pack  on  the drive that is unit 0, dual-ported, and connected to
the front end.  The installation procedure stores the  files  used  by
the  front  end on this pack.  After the installation is complete, you
can dismount  the  disk  packs  to  clean  and  maintain  the  drives.
However, during system operation, the pack that contains the front-end
files must be on dual-ported drive 0 as it was during installation.

NOTE

RP07 and RP20 disk packs are non-removable.  To  mount
an RA60 disk pack refer to the HSC-50 User's Guide.

Be careful when mounting a disk pack because the drive  shaft  can  be
damaged if the pack is jammed off center into the drive.  Follow these
instructions when mounting a pack:

1.  If another RP04 or RP06 disk is already mounted on the  drive
    and spinning, do the following:

    a.  Press the START/STOP button  and  wait  until  the  drive
        stops.

    b.  Push the door back.  Slide the pack cover down  over  the
        pack.

    c.  Turn the cover handle counterclockwise a few turns  until
        it  turns  freely.   Gently lift the pack vertically.  If
        there is any resistance, turn the handle a few more turns
        counterclockwise and lift again.

    d.  Lift the pack out of the  drive  and  place  it  on  the
        protective  bottom  cover.  Be sure that the cover clicks
        closed.

2.  Pick up the pack to be  mounted  and  remove  the  protective
    bottom cover by squeezing the handle of the bottom cover.

CAUTION

If you insert a  pack  without  removing  the
bottom  cover,  you  will be unable to use or
remove the pack.

3.  Gently lower  the  pack  vertically  into  the  drive,  being
    careful  not  to  hit  the sides of the drive.  Keep the pack
    centered in the drive while lowering it.

4.  Turn the handle clockwise about two  full  turns.   You  will
    feel  a  resistance  roughly equal to the power steering on a
    car.  When the resistance increases noticeably, stop  turning
    or damage will result.

5.  Lift off the cover vertically.

6.  Close the door to the drive.

7.  Start the drive by pressing the START/STOP button. The disk is ready to be used when the READY light comes on. (On an RPØ6 the DOOR LOCKED light ensures that the disk is mounted properly.)

8.  Be sure that the drive is not write protected. The switch labeled WRITE PROTECT must be off.

CAUTION

Do not leave a disk pack or magnetic tape on top of a disk drive. The vibration from the drive can cause these items to fall to the floor, causing expensive and irreparable damage.

➡ Step 6:  Check the CONTROLLER SELECT switches on the disk drive.

Be sure that the CONTROLLER SELECT switch on dual-ported drive Ø is set to A/B and that every other drive has the CONTROLLER SELECT switch set to A. To change the CONTROLLER SELECT switch, set the switch to the desired position and press the STOP button to cycle the drive down. When the drive has stopped spinning, press the START button and wait for the READY light to come on.

➡ Step 7:  Mount System Floppy A in drive Ø.

Place the floppy disk labeled **System Floppy A** in the left floppy drive (drive Ø). To mount a floppy disk, hold the floppy disk with your thumb on the label. Then with your thumb and the label facing upward, slide the floppy disk into the floppy drive until it contacts the back of the drive and stops. Press down the bar until it clicks.

CAUTION

Make sure that the paper directory that is sometimes included with the floppy disk is not sticking to the back of the floppy disk. Failure to do so will damage the floppy disk and the floppy disk drive.

➡ Step 8:  Mount System Floppy B in drive 1.

In the right floppy drive (drive 1), place the floppy disk labeled System **Floppy B**.

HINT

Be sure that you have mounted the floppy disks in the correct drives, or problems will develop in Step 12.

➡ Step 9:  Mount the Installation tape on MTAØ:.

Mount the correct version of the Installation tape for your system. (Refer to Chapter 1 for the correct Installation tape for your system.) Remove the write ring (if present) from the magnetic tape

labeled **TOPS-20 Installation Tape** and mount the tape on drive 0.
Drive 0 is the lowest unit on the lowest channel on the lowest TM03,
TM02 controller or DX20 controller. (Your DIGITAL Field Service
Representative gives you this information.) If you cannot determine
which drive is drive 0, make sure that all drives are off line except
the one you want to use.

CAUTION

> The logical unit number for a magnetic tape drive is
> not determined by the numbered thumbwheel on the left
> side of TU45 drives. The numbered thumbwheel is the
> slave number of the drive. Never change the setting
> of this thumbwheel.

To mount a reel of tape on a TU45 tape drive:

1. Place the reel on the top hub with the labeled side of the
   tape facing you.

2. Lock the reel on the hub by pressing the rocker in the center
   of the hub.

3. Thread the tape through the slot in front of the tape heads
   by following the arrows. Move the head shields back for
   easier access to the tape slot.

4. Wind the tape one turn clockwise onto the take-up reel.

5. Press the LOAD button. The tape slowly advances onto the
   take-up reel and moves to the logical beginning of the tape.
   If the drive overshoots the beginning of the tape, it
   repositions itself.

6. Make sure the ON LINE button is lit; if it is not, press the
   ON LINE button.

To mount a reel of tape on a TU77 or TU78 tape drive:

1. Place the reel of tape on the top hub with the labeled side
   of the tape facing you.

2. Lock the reel on the hub by pressing the rocker in the center
   of the hub.

3. Press, in order, the RESET and LOAD buttons. The tape is
   wound counterclockwise a few turns. Then the tape leader is
   threaded automatically through the slot near the upper
   right-hand corner of the drive, and the tape is positioned at
   the logical beginning of tape.

4. Press the ON LINE button.

On completion, the LOAD, ON LINE, and FILE PROTECT (FPT) lights should
be on, indicating that the tape is positioned at the beginning. When
the FILE PROTECT light is on, the system cannot write on the tape. If
the FILE PROTECT light is not on, remove the write ring from the back
of the tape.

To mount a reel of tape on a TU72 tape drive:

1. Place the reel of tape on the rightmost hub with the labeled side of the tape facing you.

2. Thread the tape leader down the slot until it is approximately three inches in front of the read/write head.

3. Press, in order, the RESET, LOAD, and START buttons. The tape leader is threaded automatically on the take-up reel and the tape is positioned at the logical beginning of tape.


## 2.3  LOADING AND STARTING THE TOPS-20 MONITOR

● To create the TOPS-20 file system, you must:

1. Load the front-end monitor from the floppy disks. Use the front end to initialize the central processor and memory.

2. Use the front-end monitor to load the TOPS-20 Magnetic Tape Bootstrap (MTBOOT) program from System Floppy A into the central processor.

3. Use MTBOOT to load the TOPS-20 monitor from magnetic tape into memory.

4. Use MTBOOT to start the TOPS-20 monitor at the file system initialization routine.

| Perform steps 10 through 21 to load and start the TOPS-20 monitor.


➡ Step 10:  Place the front-end HALT switch in the ENABLE position.

Open the second door from the left side of the DECSYSTEM-20, directly under the DECSYSTEM-20 control panel, to access the front-end switches.

Be sure that the front-end HALT switch is in the ENABLE position (Figure 2-1). If the switch is in the HALT position, move it up to the ENABLE position. When the HALT switch is in the HALT position, the front end will not operate.


➡ Step 11:  Set the switch register to 000007 (octal).

The front-end control panel has 16 switch register switches (Figure 2-1). Set them to 000007 (octal) by setting switches 2, 1, and 0 up, and leaving the rest down. (Refer to the TOPS-20 Operator's Guide for a detailed description of all switches.)

Booting the front end from a floppy disk with the switch register set to 000007 causes the front-end monitor to run the central processor initialization dialog. This loads the central processor microcode and configures central processor memory.

➡Step 12:   Hold ENABLE and press the SWITCH REGISTER button.

Hold ENABLE and press the SWITCH REGISTER button on the control   panel
(Figure   2-1).   This   loads   the   front-end   monitor   and   starts   the
initialization dialog.  The system prints:

| RSX-20F VB15-21 12:00 13-NOV-84

    [SY0: redirected to DX0:]
    [DX0: mounted]
    [DX1: mounted]
| KLI -- VERSION VB15-15 RUNNING
    KLI -- ENTER DIALOG [NO,YES,EXIT,BOOT]?
    KLI>

where:

| Item | Identifies |
|------|-----------|
| RSX-20F | The name of the front-end monitor. |
| VB15-21 | The version of the front-end monitor. |
| 12:00 13-NOV-84 | The time and date that the front-end  monitor was built. |
| SY0: | The area from which the front end obtains its files.   If   SY0:   is redirected to DX0:, the front end obtains the files from floppy drive 0.   If SY0:   is redirected to DB0:, the front end obtains the files from disk drive 0. |
| KLI | The name and version of the central processor initialization dialog. |
| KLI> | The prompt for the central processor initialization dialog. |

Error:   If the system does not print the above heading, be sure that
         the   floppy   disks   are mounted in the proper drives and the
         HALT switch is in the ENABLE position.  Then retry Step 12.

                              NOTE

           The version and edit  numbers  in  this  manual  could
           differ  from the numbers printed on your console.  The
           numbers printed on your console must be  equal  to  or
           greater than the numbers in this manual.


➡Step 13:   Type YES and press the RETURN key.

To enter the central processor initialization dialog,  type  YES  and
press  the  RETURN key.  Following this, if you answer either NO or YES
to  this  question,  you  will  see  a  description  of  your  system's
hardware.  First comes the serial number (S/N) of the CPU, followed by
its  type  and power line frequency (either 50 or 60 Hertz).  Then comes
a  list of hardware options present on your system.  If an item is not
present,  it will not be listed.  The example below shows all available
options.    Following  this,  the system prints KLI -- RELOAD MICROCODE
[YES,VERIFY,FIX,NO]?.


                              2-7
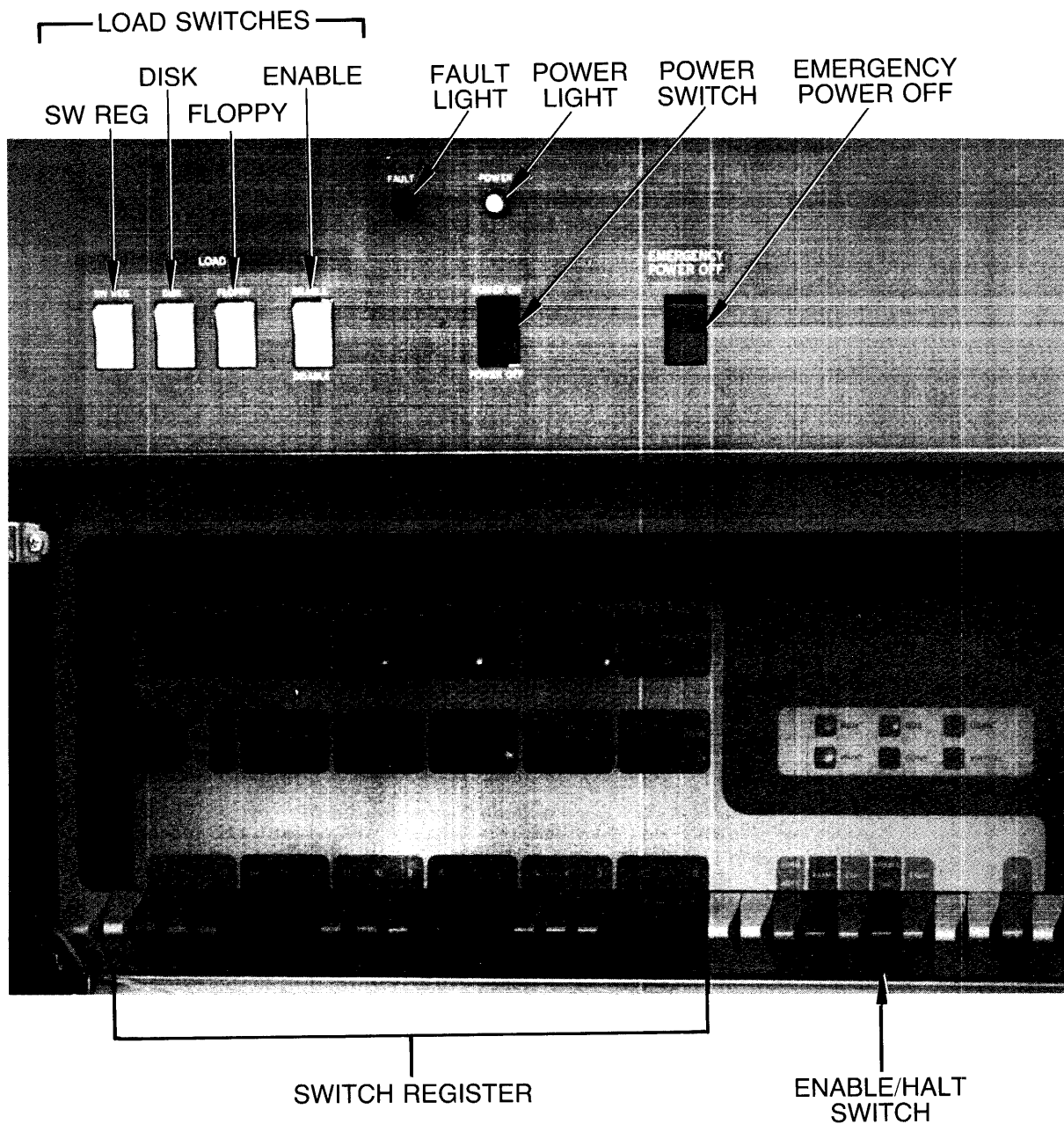
Figure 2-1:  DECSYSTEM-20 Front-End Control Panels

```
KLI -- ENTER DIALOG [NO,YES,EXIT,BOOT]?
KLI>YES <RET>
KL1 -- KL10 S/N: 2102., MODEL B, 60 HERTZ
KL1 -- KL10 HARDWARE ENVIRONMENT:
        MOS MASTER OSCILLATOR
        EXTENDED ADDRESSING
        INTERNAL CHANNELS
        CACHE

KLI -- RELOAD MICROCODE [YES,VERIFY,FIX,NO]?
KLI>
```

Error:    If the system does not print the above heading, be sure that
          the floppy disks are mounted in the proper drives, then
          return to Step 12.

NOTE

For a DECSYSTEM-20 Model 2065, the system prints:

```
KLI -- SELECT PAGE TABLE [FILE,BOTH,0,1]?
KLI>
```

A Model 2065 has two page tables, whereas there is one
page table in a Model 2060.  Answer BOTH to utilize
this additional page table.

```
KLI>BOTH <RET>
KLI -- PAGE TABLE SELECTED: BOTH
KLI -- RELOAD MICROCODE [YES,VERIFY,FIX,NO]?
KLI>
```

DELETE KEY

If you make a typing error, press the  DELETE  key  to
erase  a single character at a time.  Type <CTRL/U> to
delete the entire line.

Step 14:  Type YES KLX and press the RETURN key.

To load the central processor microcode, type YES KLX  and  press  the
RETURN  key.   After 30 seconds, during which the floppy drives click,
the microcode is loaded and the system prints KLI -- MICROCODE VERSION
2.0[407]    LOADED    followed    by    KLI -- RECONFIGURE    CACHE
[FILE,ALL,YES,NO]?.

```
KLI -- RELOAD MICROCODE [YES,VERIFY,FIX,NO]?
KLI>YES KLX <RET>
KLI -- MICROCODE VERSION 2.0[407] LOADED
```

Step 15: STOP.

Go to Step 16 if the system prints:

```
KLI -- RECONFIGURE CACHE [FILE,ALL,YES,NO]?
```

Go to Step 17 if the system prints:

```
KLI -- CONFIGURE KL MEMORY [FILE,ALL,REVERSE,FORCE,YES,NO]?
KLI>
```

➡Step 16:  Type ALL and press the RETURN key.

To reconfigure the central processor cache, type ALL and press the
RETURN key.  Upon receiving this reply, the system configures all
available cache.  After the configuration is complete, the system
prints KLI -- CONFIGURE KL MEMORY [FILE,ALL,REVERSE,FORCE,YES,NO]?.

        KLI>ALL <RET>
        KLI -- ALL CACHES ENABLED
        KLI -- CONFIGURE KL MEMORY [FILE,ALL,REVERSE,FORCE,YES,NO]?
        KLI>

    Error:    If the system does not print one of the headings  above,  be
              sure that the floppy disks are mounted in the proper drives,
              then return to Step 12.


➡Step 17:  Type ALL and press the RETURN key.

To configure the central processor memory, type ALL and press the
RETURN key.  This answer configures all available memory in the most
useful manner and then prints a message indicating the results.  These
results will vary, depending on the type of hardware you have.  Check
the two sample outputs below to see which one pertains to your system.
(Refer to the TOPS-20 Operator's Guide for details on memory
configuration.)  After the configuration is complete, the system
prints KLI -- LOAD KL BOOTSTRAP [YES,NO,FILENAME]?.

        KLI -- CONFIGURE KL MEMORY [FILE,ALL,REVERSE,FORCE,YES,NO]?
        KLI>ALL <RET>

Depending on the size of your system, your output will resemble one of
the following:

        LOGICAL MEMORY CONFIGURATION
          ADDRESS   SIZE   INT   TYPE   CONTROLLER
        00000000   768K    4    MF20    10

|       KLI -- LOAD KL BOOTSTRAP [FILE,YES,NO,FILENAME]?

        or

        LOGICAL MEMORY CONFIGURATION
          ADDRESS  SIZE   INT   TYPE   CONTROLLER
        00000000   128K    4    MB20       0 % 1
        00400000   512K    4    MF20      10
        02400000   256K    4    MF20      14
        03400000  3200K         NON-EXISTENT

|       KLI -- LOAD KL BOOTSTRAP [FILE,YES,NO,FILENAME]?

    Error:    If the system does not print a heading  similar  to  one  of
              those  above,  be  sure  that  the  correct floppy disks are
              mounted in the proper drives, then return to Step 12.

                                NOTE

            The MOS memory configurator is capable of  configuring
            4096K  of  memory.  The  message  concerning  the
            NON-EXISTENT memory can be ignored.  This message  is
            specifying  the difference between the actual physical
            memory and 4096K.

➡ Step 18:   Type MTBOOT and press the RETURN key.

After the prompt KLI>, type MTBOOT and press the RETURN key.

|         KLI -- LOAD KL BOOTSTRAP [FILE,YES,NO,FILENAME]?
        KLI>MTBOOT <RET>
        KLI -- WRITE CONFIGURATION FILE [YES,NO]?
        KLI>

The system now asks whether it should write the front-end
configuration file KL.CFG, which describes your current configuration
and the method you used to bring up the system (disk, floppy disks, or
magnetic tape).  If this file is written, the front end will attempt
to use the same method and the same configuration when you next
install or reload the system.  The default answer to the question
WRITE CONFIGURATION FILE [YES,NO]?  is YES.  Therefore, it is
recommended that you answer NO to this question for the present.
Later, when you have a front-end configuration that should be recorded
| (Step 140 in Chapter 4), the configuration file will be written for
you.

➡ Step 19:   Type NO and press the RETURN key.

After the prompt KLI>, type NO and press the RETURN key.

        KLI -- WRITE CONFIGURATION FILE [YES,NO]?
        KLI>NO <RET>
        KLI -- BOOTSTRAP LOADED AND STARTED

|         BOOT V11.0(311)

        MTBOOT>

The front end loads the central processor memory with the bootstrap
program from the floppy mounted on drive 0, and then starts the
bootstrap program.  When at bootstrap command level (about 45
seconds), the system prints MTBOOT>.

Error:   If the system prints:

        KLI> -- ?BOOTSTRAP LOAD FAILED

or any other error message, you may have the wrong floppy
disk mounted in drive 0 or you may not have stopped the
central processor.  Type <CTRL/\>.  (The backslash key (\)
is near the LINEFEED key.)  After 10 seconds, the system
prints PAR>.  Type the command ABORT and press the RETURN
key.  The system prints PAR%, which means the central
processor has stopped.  Go back to Step 12.

If the system prints the following message exactly:

        KLI -- ?BOOT FILE NOT FOUND
        KLI -- ?BOOTSTRAP LOAD FAILED
        KLI -- ENTER DIALOG [NO,YES,EXIT,BOOT]?
        KLI>

you either have the wrong floppies mounted or you mistyped
the name of the bootstrap.  Go back to Step 13.  If the
error recurs, make sure that you have mounted the proper
floppy disks.  If the error continues, contact DIGITAL
Software Support.

**➡ Step 20:** **Type /L and press the RETURN key.**

To load the TOPS-20 monitor from magnetic tape into memory, type /L and press the RETURN key. The system rewinds the tape on drive 0, loads the resident monitor, skips a line, and prints MTBOOT>.

```
MTBOOT>/L <RET>
[BOOT: LOADING] [OK]

MTBOOT>
```

### DX20 Microcode

You will receive a message concerning the DX20 microcode ONLY if you are installing the TOPS-20 software on a DECSYSTEM-20 with an RP20 tape or disk controller.

Error:    If you made a typing error and pressed the RETURN key, the system prints MTBOOT> again.  Reissue the correct command.

If you did not put the magnetic tape on line, the system prints:

```
?NO RDY DRIVE
MTBOOT>
```

Place the tape on line and give the /L command again.

If the system prints one of these messages:

```
?BAD FIL FMT
?BAD EXE DIR
```

do the following:

1.  Make sure that you have mounted the correct TOPS-20 Installation tape on drive 0 and that all other tape drives are off line.

2.  Rewind the tape and try giving the /L command again.

If the error recurs, call DIGITAL Software Support.

Error:    If the system does not print MTBOOT>, you probably mistyped the name MTBOOT.  The system then prints:

```
KLI -- ?BOOT FILE NOT FOUND
KLI -- ?BOOT LOAD FAILED
KLI -- ENTER DIALOG [NO,YES,EXIT,BOOT]?
KLI>
```

If the floppy disks are mounted properly and you typed MTBOOT properly, go back to Step 12.  If the error recurs, contact DIGITAL Software Support.

The system will use the magnetic tape that is on line. Check to see if you have more than one tape drive on line. If so, press the ON LINE button to take each unwanted drive off line. Try typing /L again.

NOTE

The following procedure is intended for use during installation only. If you are trying to bring up a monitor that has already been installed on a set of TOPS-20 disk packs, refer to Chapter 5 of this guide or to the TOPS-20 Operator's Guide for the correct procedure.

**Step 21:** **Type /G143 and press the RETURN key.**

To start the TOPS-20 file-system initialization routine, type /G143 and press the RETURN key. The system starts the TOPS-20 monitor at the file-system initialization routine.

    MTBOOT>/G143 <RET>

    [FOR ADDITIONAL INFORMATION TYPE "?" TO ANY OF THE FOLLOWING
    QUESTIONS.]

    DO YOU WANT TO REPLACE THE FILE SYSTEM ON THE SYSTEM
    STRUCTURE?

Error:   If you make an error and the system reprints MTBOOT>, reissue the correct command.

         If the system does not print MTBOOT>, check your typescript. Go back to Step 12.

         If the system prints:

             ?BAD EXE DIR

         you probably typed the wrong command. Try giving the /G143 command again. If you still get an error, go back to Step 12.


## 2.4  INITIALIZING THE TOPS-20 FILE SYSTEM

To initialize the TOPS-20 file system, you must define the name of the system structure and the number and location of each disk pack that is part of the system structure.

The steps in this section initialize the TOPS-20 file system by creating:

1. New home blocks (which contain pointers to the beginning of the file system).

2. The directory <ROOT-DIRECTORY> (which contains pointers to all the directories in the system).

3. The directories <SYSTEM>, <SUBSYS>, <NEW-SYSTEM>, <NEW-SUBSYS>, <UETP>, <UETP.LIB>, <UETP.RUN>, <ACCOUNTS>, <SYSTEM-ERROR>, <OPERATOR>, and <SPOOL>.

4. Space for the front-end file system.

5. The system swapping space (the area allocated for the movement, by the monitor, of pages between memory and disk).

# CREATING THE TOPS-20 FILE SYSTEM

NOTE

Refer to the TOPS-20 System Manager's Guide for a detailed explanation of all the above.

| Perform Steps 22 through 35 to initialize the TOPS-20 file system.

**➡Step 22: Type YES and press the RETURN key.**

To create the system structure, type YES and press the RETURN key.

[FOR ADDITIONAL INFORMATION TYPE "?" TO ANY OF THE FOLLOWING QUESTIONS.]

DO YOU WANT TO REPLACE THE FILE SYSTEM ON THE SYSTEM STRUCTURE? YES <RET>

DO YOU WANT TO DEFINE THE SYSTEM STRUCTURE?

**➡Step 23: Type YES and press the RETURN key.**

To write the home blocks for each unit in the system structure, type YES and press the RETURN key.

DO YOU WANT TO DEFINE THE SYSTEM STRUCTURE? YES <RET>

HOW MANY PACKS ARE IN THIS STRUCTURE:

**➡Step 24: Type the number of packs and press the RETURN key.**

Count the number of disk packs you plan to have in your system structure. Type the answer and press the RETURN key. The example uses 1.

HOW MANY PACKS ARE IN THIS STRUCTURE: 1 <RET>

ON WHICH "CHANNEL,CONTROLLER,UNIT" IS LOGICAL PACK # 0 MOUNTED:

Error:   If you type the wrong number of disk packs, type <CTRL/\>. After the system prints PAR> (10 seconds), type ABORT and press the RETURN key. The system prints PAR%, indicating that the central processor has stopped. Go back to Step 12 and start again.

**➡Step 25: Type ? (do not press the RETURN key).**

You must inform the system of the location of each disk pack that is to be in the public file system. If you are not sure of the channel, controller, and unit numbers of each disk pack, type ?. This causes the system to print the channel and unit number of each disk drive.

NOTE

The example shows channel and unit numbers for a specific configuration. The numbers for your system will probably be different, as they are generated by your own system configuration.

ON WHICH "CHANNEL,CONTROLLER,UNIT" IS LOGICAL PACK # 0 MOUNTED: ?
[ENTER A TRIPLE OF NUMBERS SEPARATED BY COMMAS THAT SPECIFY THE
 CHANNEL, CONTROLLER, AND UNIT UPON WHICH THE APPROPRIATE PACK IS
 MOUNTED. THE FOLLOWING IS A LIST OF VALID CHANNEL, CONTROLLER,
 AND UNIT NUMBERS:
1,-1,0 ;TYPE=RP06,DUAL PORT
1,-1,1 ;TYPE=RP06,OFFLINE,DUAL PORT
1,-1,2 ;TYPE=RP04,OFFLINE,DUAL PORT
1,-1,3 ;TYPE=RP07,OFFLINE
]

ON WHICH "CHANNEL,CONTROLLER,UNIT" IS LOGICAL PACK # 0 MOUNTED:

NOTE

The controller number is always -1 for all system
structures.

Error:     If you followed the procedure in Step 6 exactly, drive 0
           will be listed as dual-ported. Of the remaining drives,
           those that contain the packs that are to be your system
           structure will be listed as on line. All other drives will
           be listed as off line.

           If a drive that you want to use is not listed, the drive's
           controller select switch is probably set to B. Follow the
           procedure in Step 6 for changing it to A. Then type
           <CTRL/\>. After 10 seconds, the system prints PAR>. Type
           ABORT and press the RETURN key to halt the central
           processor. Return to Step 12 and start again.

           If a drive you want to use is listed as off line, turn it on
           line and wait for the READY light to come on. Go back to
           Step 12.

➡ Step 26:   Type the channel number, controller number, and unit number
             and press the RETURN key.

Type the channel number, the controller number, and the unit number of
the dual-ported drive, and press the RETURN key. You must answer this
question once for each disk pack. If there is any problem, ask your
DIGITAL Field Service representative to give you the channel and unit
number of each drive. The controller number of all drives (except the
RP20) is -1. (The RP20 controller number cannot be -1 as it cannot be
used in the system structure.)

           ON WHICH "CHANNEL,CONTROLLER,UNIT" IS LOGICAL PACK # 0 MOUNTED:
           1,-1,0 <RET>

           DO YOU WANT THE DEFAULT SWAPPING SPACE?

Error:     If your answer is invalid, the system prints one of several
           messages and repeats the question. You can simply repeat
           the current step.

Error:     If your answer is valid but is not the one you wanted, type
           <CTRL/\>. After 10 seconds, the system prints PAR>. Type
           ABORT and press the RETURN key to halt the central
           processor. Go back to Step 12 and start again.

➡ Step 27:   Type ?   (do not press the RETURN key).

To determine the default size of the swapping space for  your  system,
| type  ?.  The system prints the default swapping space, which is 10070
● for a 2060.

If you are planning on using a monitor other than MONBIG for the 2060,
● refer  to Chapter 3 Section 3.1 for the correct swapping space for the
monitor you choose.

        DO YOU WANT THE DEFAULT SWAPPING SPACE? ?
|       [THE DEFAULT IS 10070 PAGES]

        DO YOU WANT THE DEFAULT SWAPPING SPACE?


➡ Step 28:   Type YES or NO and press the RETURN key.

If you want to accept the default swapping space size, type YES, press
the RETURN key, and proceed to Step 30.

        DO YOU WANT THE DEFAULT SWAPPING SPACE? YES <RET>

        DO YOU WANT THE DEFAULT SIZE FRONT END FILE SYSTEM?

If you want to specify the size of the swapping  space,  type  NO  and
press  the  RETURN  key.   (The  formula  for  determining  the proper
swapping space  for  your  system  is  found  in  the  TOPS-20  System
Manager's  Guide.)  After you determine the size of the swapping space
you need, proceed to Step 29.

        DO YOU WANT THE DEFAULT SWAPPING SPACE? NO <RET>

        HOW MANY PAGES FOR SWAPPING?

Error:    If you type the  wrong  answer,  type  <CTRL/\>.   After  10
          seconds,  the  system prints PAR>.  Type ABORT and press the
          RETURN  key  to  halt  the  central  processor.   Return  to
          Step 12 and start again.


➡ Step 29:   Type the decimal number of pages and press the RETURN key.

Type the decimal number of disk pages you want to assign for  swapping
and press the RETURN key.  This option is provided so you can increase
the amount of swapping space in the future.  The default size  is  the
maximum  amount  that  your present monitor will use for swapping.  If
you decide to increase the amount used by the monitor in  the  future,
you  must already have assigned that much space on the disk during the
installation procedure.  Otherwise, you must repeat  the  installation
procedure  and  specify  the larger number.  The system will round the
number of pages specified up to an integral number of cylinders on the
disk.

| To check the number  of  swapping  pages  for  the  monitor  you  have
| selected, refer to Chapter 3, Section 3.1.
|
| For TCP/IP installations, refer to Appendix C, Section  C.5,  for  the
| correct number of swapping pages for TCP/IP monitors.

        HOW MANY PAGES FOR SWAPPING? n <RET>

        DO YOU WANT THE DEFAULT SIZE FRONT END FILE SYSTEM?

Error:   If you type an invalid number, the system prints:

> ? INVALID NUMBER OF SWAPPING PAGES FOR THIS TYPE OF DISK

and returns to the question in Step 28.  If you type an answer that is valid but is not the one you wanted, type <CTRL/\>. After 10 seconds, the system prints PAR>.  Type ABORT and press the RETURN key to halt the central processor.  Go back to Step 12 and start again.

➡ Step 30:   Type ?  (do not press the RETURN key).

To determine the default size of the front-end file  system,  type  ?. If you already know what the default is, you can omit this step.

> DO YOU WANT THE DEFAULT SIZE FRONT END FILE SYSTEM? ?
> [THE DEFAULT IS 950 PAGES]
>
> DO YOU WANT THE DEFAULT SIZE FRONT END FILE SYSTEM?

                              NOTE

> If you are using an RP07 disk  drive  as  the  system
> structure,  do not reserve any pages for the front-end
> file system.

➡ Step 31:   Type YES and press the RETURN key.

Type YES, press the RETURN key, and proceed to Step 32.

> DO YOU WANT THE DEFAULT SIZE FRONT END FILE SYSTEM? YES <RET>
>
> DO YOU WANT THE DEFAULT SIZE BOOTSTRAP AREA?

➡ Step 32:   Type ?  (do not press the RETURN key).

To find out how many pages are  assigned  as  the  default  boot  file space, type ?.  The system responds with the number of pages allocated for the boot file space.

> DO YOU WANT THE DEFAULT SIZE BOOTSTRAP AREA? ?
> [THE DEFAULT IS 64 PAGES]
>
> DO YOU WANT THE DEFAULT SIZE BOOTSTRAP AREA?

➡ Step 33:   Type YES and press the RETURN key.

It is recommended that you take the default bootstrap space.  Type YES and press the RETURN key.

> DO YOU WANT THE DEFAULT SIZE BOOTSTRAP AREA? YES <RET>
>
> WHAT IS THE NAME OF THIS STRUCTURE?

                              NOTE

> Before proceeding with Step 34, refer to  the  TOPS-20
> System  Manager's  Guide  for  information  on  naming
> structures.

➡ Step 34:  Type the name of the structure and press the RETURN key.

TOPS-20 recognizes any six-character name as a valid structure name.
| Type the name of the structure and press the RETURN key.  The system
| prints a message to indicate that the structure is successfully
| defined and mounted.  The following examples use PS:  as the structure
name.

     WHAT IS THE NAME OF THIS STRUCTURE? PS: <RET>

     [STRUCTURE "PS" SUCCESSFULLY DEFINED]

●      [PS MOUNTED]

●      %%NO SETSPD.

%%NO SETSPD means that the system cannot run the SETSPD program.  This
is expected because you have not yet loaded the SETSPD program into
the file system.  This message can be printed at any time before the
system requests the date and time.

Error:    If certain error conditions occur while the monitor is
            mounting the structure (a drive is write protected, for
            example), the system prints an error message followed by:

            ?HAVE THE PROBLEMS MENTIONED ABOVE BEEN CORRECTED YET:

            When the problem has been corrected, type Y and press the
            RETURN key.  Go back to Step 12.

➡ Step 35:  STOP.

If the system prints a message similar to:

     ?PS UNIT 0 HAS NO BAT BLOCKS
     DO YOU WANT TO WRITE A SET OF PROTOTYPE BAT BLOCKS?

type yes and press the RETURN key.  Continue with the next step.


## 2.5  RESTARTING THE MONITOR

Now that the file system is initialized, you can start the system by
| performing Steps 36 to 42.

➡ Step 36:  Type the date and time and press the RETURN key.

The system prints:

     System restarting, wait...

     ENTER CURRENT DATE AND TIME:

Type the date and time in the format dd-mmm-yy hhmm.  Then press the
| RETURN key.  Be sure to enter the time in 24-hour format.  For
example, 4:30 PM on the twelfth day of June can be entered as
12-JUN-85 1630.

     ENTER CURRENT DATE AND TIME: 12-JUN-85 1630 <RET>

The system responds by retyping the date and time.

        YOU HAVE ENTERED WEDNESDAY, 12-JUNE-1985 4:30PM,
        IS THIS CORRECT (Y,N)


➡ Step 37:  Type Y and press the RETURN key if the date is correct.

If the date and time are correct, type Y and press the RETURN key.  If
the date and time are incorrect, type N and press the RETURN key.  The
system again asks for the date and time.

        YOU HAVE ENTERED WEDNESDAY, 12-JUNE-1985 4:30PM,
        IS THIS CORRECT (Y,N) **Y** <RET>
        WHY RELOAD?


                            CI20

        If your system configuration does  not  include  CI20,
        ignore  the  following  message  when  you  start  the
        monitor:

        BUGCHK "NOLODF" AT dd-mmm-yy hh:mm
        COULD NOT FIND CI-20 MICROCODE LOAD PROGRAM

        If you are installing CI20, you can also  ignore  this
        message, as the necessary files are not yet on disk.


➡ Step 38:  Type NEW and press the RETURN key.

Type NEW and press the RETURN key.  The text you type  following  this
question      is     entered     into     the     system    error     file,
PS:<SYSTEM-ERROR>ERROR.SYS.  The TOPS-20 monitor starts  running,  and
the  system  prints  <SYSTEM>ACCOUNTS-TABLE.BIN  NOT  FOUND  - ACCOUNT
VALIDATION IS DISABLED and RUNNING DDMP.

        WHY RELOAD? NEW <RET>

        <SYSTEM>ACCOUNTS-TABLE.BIN NOT FOUND - ACCOUNT VALIDATION IS
        DISABLED

        RUNNING DDMP


        NO SYSJOB

The system prints the message <SYSTEM>ACCOUNTS-TABLE.BIN NOT  FOUND  -
ACCOUNT VALIDATION IS DISABLED because the ACTGEN program did not run.
(Refer to the TOPS-20 System Manager's Guide  for  more  information.)
The  system  runs  DDMP  and  then prints NO SYSJOB because the SYSJOB
program is not stored on disk.  Ignore this message as SYSJOB  is  not
needed yet.

Error:    If  you  type  an  incorrect  string  to  the  WHY  RELOAD?
          question, the system prints the valid abbreviations and then
          prompts you again for the answer.

Ethernet

If your system configuration does not include an Ethernet, ignore the following message when you start the monitor:

BUGCHK "KNICFF" AT dd-mmm-yy hh:mm:ss
PHYKNI - CANNOT RELOAD THE KLNI

If you are installing an Ethernet, you can also ignore this message, as the necessary files are not yet on disk.

**➡ Step 39:   Type <CTRL/C>.**

After the system prints NO SYSJOB, type <CTRL/C> to start a job.

NO SYSJOB

<CTRL/C>
NO EXEC
MX>

The system prints NO EXEC because the file PS:<SYSTEM>EXEC.EXE (containing the TOPS-20 command processor) does not exist. The command processor is not needed at this point, so ignore this message.

**➡ Step 40:   Type G, then MTA0:.   Press the RETURN key.**

The system is now at the miniexec command level, and you can type any miniexec command. Use this command language to load the TOPS-20 command processor from tape. (Type <CTRL/U> if you want to erase a line while at miniexec command level.)

Type G. The system prints ET FILE. Type MTA0: and press the RETURN key. The system skips over the end of the monitor save file and prints the miniexec prompt MX>.

NO EXEC
MX>GET FILE MTA0: <RET>
MX>

NOTE

If you are using a tape drive other than tape drive 0, reply accordingly in the following steps and/or error recovery procedures, for example, MTA1:, MTA2:.

Error:   If you get a question mark (?) after issuing the command, you can ignore this message and continue with the next step.

**➡ Step 41:   Again type G, then MTA0:.   Press the RETURN key.**

To load the TOPS-20 command processor from magnetic tape into memory, type G. The system prints ET FILE. Type MTA0: and press the RETURN key. The system reads the program from MTA0: into memory and prints the miniexec prompt when it is finished.

MX>GET FILE MTA0: <RET>
MX>

Error:    If you get an error in the form "INTERRUPT AT location," the
          tape could be bad or you may be specifying the wrong tape
          drive.  Start at Step 10 once more.  If the errors continue,
          call DIGITAL Software Support.

          If you make a typing mistake and press the RETURN  key,  the
          system prints MX>.  Try again.

➡ Step 42:   Type S and press the RETURN key.

To start the TOPS-20 command  processor  that  you  just  loaded  into
memory,  type  S.  The system prints TART.  Press the RETURN key.  The
system prints the name and version of the  TOPS-20  command  processor
and the TOPS-20 prompt (@).

     MX>START <RET>

|    TOPS-20 Command processor 6.1(273)
     @

Error:    If the system prints INTERRUPT AT 1, you typed  only  one  G
          command  to  the miniexec.  Repeat the command in this step.
          If you still get the error, go back  to  Step  12.   If  the
          errors continue, contact DIGITAL Software Support.

          If you receive the error message INTERRUPT AT 601772, follow
          these error recovery procedures:

          1.  Rewind  the  tape  manually  and  give  the   following
              commands:

                  MX>GET FILE MTA0:  <RET>
                  MX>RESET <RET>
                  MX>GET FILE MTA0:  <RET>
                  MX>START <RET>

          2.  Proceed to Step 43.

          If you make a typing error and press  the  RETURN  key,  the
          system prints MX>.  Try again.

Error:    If many error messages are  repeatedly  printed,  the  tape
          could  be bad.  Press the front-end HALT switch and wait one
          minute.  Go back to Step 12.  If the errors persist, ask for
          another tape.


## 2.6  CREATING SYSTEM DIRECTORIES

With the system running, you must create directories to  store  system
files  and  files for testing the system.  You create these directories
| by running the DLUSER program from tape (Steps 43 through 46).


➡ Step 43:   Type ENABLE and press the RETURN key.

To load files into privileged areas and to  create  directories,  give
the ENABLE command to obtain the required capabilities.

     @ENABLE <RET>
     $

➡ Step 44:   Type RUN MTAØ:  and press the RETURN key.

To run the DLUSER program from the  magnetic  tape,  type  RUN  MTAØ:.
After you issue this command, the system prints the prompt DLUSER>.

        $RUN MTAØ: <RET>
        DLUSER>

    Error:     If you receive an error message, rewind the tape,  skip  two
               files,  and  reissue  this  command.   The following example
               shows how to do this for MTAØ:.

               $REWIND MTAØ: <RET>
               $SKIP MTAØ: 2 FILES <RET>
               $RUN MTAØ: <RET>
               DLUSER>


➡ Step 45:   Type LOAD MTAØ:  and press the RETURN key.

To load the directory structure from the tape into  the  file  system,
type LOAD MTAØ:.  After a few seconds, the system prints DONE. and the
DLUSER prompt.

        DLUSER>LOAD MTAØ: <RET>

        DONE.
        DLUSER>

    Error:     If you mistype the command and have not pressed  the  RETURN
               key,  delete  the  entire  line by typing <CTRL/U>, and then
               reissue the command.

               If you mistyped the command  and  pressed  the  RETURN  key,
               follow the error recovery procedure in Step 44.

               If you get a group of JSYS error messages, you probably  did
               not  give  the  ENABLE  command  in  Step 43.  Type <CTRL/C>
               twice, type ENABLE, press  the  RETURN  key,  and  give  the
               following commands:

               $REWIND MTAØ: <RET>
               ?Device MTAØ: open on JFN 3
               %Close JFN? YES <RET>
                3 MTAØ:        [OK]
               $SKIP MTAØ: 2 FILES <RET>
               $RUN MTAØ: <RET>
               DLUSER>LOAD MTAØ: <RET>

               DONE.
               DLUSER>


➡ Step 46:   Type EXIT and press the RETURN key.

Type EXIT to end the DLUSER program.  The system  prints  the  ENABLEd
prompt ($).

        DLUSER>EXIT <RET>
        $

## 2.7  RUNNING DUMPER FROM TAPE

The DUMPER program places files from the magnetic tape into the
TOPS-20 file system.  The DUMPER program is the fifth file on the
Installation Tape.

| For the output from the DUMPER command FILES to print the width (132
| columns) of the CTY paper, rather than wrap after 80 columns, enter
| the following command before starting DUMPER:
|
|     $TERMINAL WIDTH 132 <RET>
|
| To run DUMPER, perform Steps 47 and 48.


**➡ Step 47:**  Type RUN MTA0:  and press the RETURN key.

The DUMPER program is on the tape mounted on drive 0.  Since the  tape
is already positioned at the DUMPER program, type RUN MTA0:.  After
the DUMPER program starts, the system prints the DUMPER prompt.

     $RUN MTA0: <RET>
     DUMPER>

Error:     If you get errors, the magnetic tape was either not recorded
           properly or not positioned properly.  Rewind the tape, skip
|          four files, and try again.  The following lines show how  to
           do this for MTA0:.  If the errors persist, contact DIGITAL
           Software Support.

              $REWIND MTA0: <RET>
|             $SKIP MTA0: 4 FILES <RET>
              $RUN MTA0: <RET>
              DUMPER>


**➡ Step 48:**  Type TAPE MTA0:  and press the RETURN key.

Tell DUMPER which tape drive to use by typing TAPE MTA0:.  The  system
then prints the DUMPER prompt.

     DUMPER>TAPE MTA0: <RET>
     DUMPER>

Error:     If you make a typing error, reissue the command.


## 2.8  RESTORING TOPS-20 BUNDLED SOFTWARE FROM TAPE

Restore the files for the directories  PS:<SYSTEM>,  PS:<SUBSYS>,  and
PS:<UETP.LIB> from the tape.

Give the DUMPER command FILES just before the RESTORE command  if  you
want  the  system  to  print  the  file  specification of each file it
restores.  (The  installation  takes  longer  if  you  print  this
information.)  To  stop printing each file specification, give the NO
FILES command after the current RESTORE command finishes.  (Refer  to
the  TOPS-20  User  Utilities  Guide for an explanation of any messages
that DUMPER may print on your terminal.)

NOTE

This procedure restores the files on the´ Installation
tape to a structure called PS:. If in Step 34 of this
guide you gave a structure name other than PS:, type
the structure name you specified in place of PS: in
the following steps. For example:

RESTORE PS:<*>*.*.* FOO:<SYSTEM> <RET>

Note that the files are being restored to a structure
called FOO:.

| Perform Steps 49 through 56 to restore the bundled software.


➡ Step 49:    Type RESTORE    PS:<*>*.*.*    PS:<SYSTEM>*.*.*    and    press    the
RETURN key.

To copy the TOPS-20 monitor and its related programs from magnetic
tape to disk, type the RESTORE command. This command restores all the
files in the first saveset to the directory PS:<SYSTEM>. When all the
files are restored, you return to the DUMPER prompt.

```
|    DUMPER>RESTORE PS:<*>*.*.* PS:<SYSTEM>*.*.* <RET>
|    Saveset ""SYSTEM FILES FOR TOPS-20 V6.1""
|     Loading files into PS:<SYSTEM>
|     End of Saveset.
|
|
|     Total files restored:    n
|     Total pages restored:    n
|    DUMPER>
```
●
Error:    If you do not type the correct input structure, PS:, or if
the tape is not positioned correctly, no files are restored
from tape. In this case you will not see the message
"Loading files into PS:<SYSTEM>." To correct this error,
type <CTRL/E>, give the following commands, and begin again
| at Step 48.

```
|                    <CTRL/E>
|                    Interrupting...
|                    DUMPER>>ABORT <RET>
|                     Aborting RESTORE command...
|                    DUMPER>REWIND <RET>
|                    DUMPER>EXIT <RET>
|                    $SKIP MTA0: 4 FILES <RET>
|                    $RUN MTA0: <RET>
|                    DUMPER>
```

Error:    If you do not type the correct structure and directory name,
PS:<SYSTEM>, the files are restored to the wrong directory.
To correct this error, type <CTRL/E>, and give the following
commands. Then reissue the RESTORE command in this step.
Be sure to delete and expunge the files in the incorrect
directory.

```
<CTRL/E>
Interrupting...
DUMPER>>ABORT <RET>
 Aborting RESTORE command...
DUMPER>REWIND <RET>
DUMPER>EXIT <RET>
$SKIP MTA0: 4 FILES <RET>
$RUN MTA0: <RET>
DUMPER>TAPE MTA0: <RET>
DUMPER>
```

➡ Step 50:    Type RESTORE   PS:<*>*.*.*   PS:<SUBSYS>*.*.*   and   press   the
              RETURN key.

Restore the system program files to the directory PS:<SUBSYS> with the
RESTORE   command.   When all the files are restored, you return to the
DUMPER prompt.

```
DUMPER>RESTORE PS:<*>*.*.* PS:<SUBSYS>*.*.* <RET>
Saveset ""SUBSYS FILES FOR TOPS-20 V6.1""
 Loading files into PS:<SUBSYS>
 End of Saveset.


 Total files restored:    n
 Total pages restored:    n
DUMPER>
```

Error:    If you do not type the correct input structure, PS:,   or  if
          the   tape is not positioned correctly, no files are restored
          from tape.  In this   case   you   will   not   see   the message
          "Loading   files   into   PS:<SUBSYS>."   To correct this error,
          type <CTRL/E>, give the following commands, and begin   again
          at Step 48.

```
          <CTRL/E>
          Interrupting...
          DUMPER>>ABORT <RET>
           Aborting RESTORE command...
          DUMPER>REWIND <RET>
          DUMPER>EXIT <RET>
          $SKIP MTA0: 4 FILES <RET>
          $RUN MTA0: <RET>
          DUMPER>
```

Error:    If you forget to type the directory PS:<SUBSYS>,   the   files
          are restored to the wrong directory.  Type <CTRL/E> and give
          the following commands to correct the error.   Then   reissue
          the   RESTORE   command   in   this step.  Be sure to delete and
          expunge the files in the incorrect directory.

```
          <CTRL/E>
          Interrupting...
          DUMPER>>ABORT <RET>
           Aborting RESTORE command...
          DUMPER>REWIND <RET>
          DUMPER>EXIT <RET>
          $SKIP MTA0: 4 FILES <RET>
          $RUN MTA0: <RET>
          DUMPER>TAPE MTA0: <RET>
          DUMPER>SKIP 1 <RET>
          DUMPER>
```

➡ <u>Step 51:</u>   <u>Type RESTORE   PS:<*>*.*.*   PS:<SUBSYS>*.*.*   and   press   the</u>
        <u>RETURN key.</u>

To restore the GALAXY files into the directory PS:<SUBSYS>,  type  the
RESTORE  command.   When all the files are restored, you return to the
DUMPER prompt.

```
        DUMPER>RESTORE PS:<*>*.*.* PS:<SUBSYS>*.*.* <RET>
        Saveset ""GALAXY SUBSYS FILES FOR TOPS-20 V6.1""
         Loading files into PS:<SUBSYS>
         End of Saveset.


         Total files restored:     n
         Total pages restored:     n
        DUMPER>
```

Error:     If you forget to type PS:<SUBSYS>, the system   restores   the
           files   to the wrong directory.  Type <CTRL/E> to stop DUMPER
           and enter the  commands  listed  below.   Then  reissue  the
           RESTORE command in this step.  Be sure to delete and expunge
           the files in the incorrect directory.

```
               <CTRL/E>
               Interrupting...
               DUMPER>>ABORT <RET>
                Aborting RESTORE command...
               DUMPER>REWIND <RET>
               DUMPER>EXIT <RET>
               $SKIP MTA0: 4 FILES <RET>
               $RUN MTA0: <RET>
               DUMPER>TAPE MTA0: <RET>
               DUMPER>SKIP 2 <RET>
               DUMPER>
```

➡ <u>Step 52:</u>   <u>Type RESTORE PS:<*>*.*.*   PS:<UETP.LIB>*.*.*   and   press   the</u>
        <u>RETURN key.</u>

To restore the files into the directory <UETP.LIB>, type  the  RESTORE
command.   When  all  the files are restored, you return to the DUMPER
prompt.

```
        DUMPER>RESTORE PS:<*>*.*.* PS:<UETP.LIB>*.*.* <RET>
        Saveset ""UETP FILES FOR TOPS-20 V6.1""
         Loading files into PS:<UETP.LIB>
         End of Tape.


         Total files restored:     n
         Total pages restored:     n
        DUMPER>
```

Error:     If you do not type the correct  input  structure,  PS:,  for
           example,   or  if  the  tape  is not positioned correctly, no
           files are restored from tape.  In this case you will not see
           the  message "Loading files into PS:<UETP.LIB>."  To correct
           this error, type <CTRL/E>, give the following commands,  and
           begin again at Step 48.

```
<CTRL/E>
Interrupting...
DUMPER>>ABORT <RET>
Aborting RESTORE command...
DUMPER>REWIND <RET>
DUMPER>EXIT <RET>
$SKIP MTA0: 4 FILES <RET>
$RUN MTA0: <RET>
DUMPER>
```

➡ Step 53:   Type EXIT and press the RETURN key.

Type EXIT to end DUMPER.  The system prints the ENABLEd prompt ($).

```
DUMPER>EXIT <RET>
$
```

➡ Step 54:   Type UNLOAD MTA0:  and press the RETURN key.

● To remove the TOPS-20 Installation tape  from  the  tape  drive,  type
UNLOAD MTA0:.  The system rewinds the tape onto the source reel.

```
$UNLOAD MTA0: <RET>
$
```

You can now remove the tape from the tape drive.

Error:    If the system prints:

```
%Device open in lower fork
%Kill lower fork?
```

type YES and press the RETURN key.  The system unloads  your
tape.

➡ Step 55:   Type INFORMATION DISK-USAGE PS:<*> and press the RETURN key.

If you give the command  INFORMATION  DISK-USAGE  PS:<*>,  the  system
prints  the size of every directory on the public structure, PS:.  The
example in Figure 2-2 was obtained using a DECSYSTEM-20,  model  2060.
You will notice that there are two directories called <NEW-SYSTEM> and
<NEW-SUBSYS>.  These directories should have no files associated  with
them.   They were created by the monitor and will be used in the event
you update your system to a newer release  of  the  TOPS-20  operating
system.

Error:    If the "Pages assigned" for  each  directory  shown  do  not
          approximately  match  the  value  shown in this guide or the
          value derived from the directory listing shipped  with  your
          Installation  tape,  some  files  may  not  have been copied
          correctly.  Mount the tape again on MTA0:,  skip  four  files
          and begin again at Step 47.

```
$INFORMATION DISK-USAGE PS:<*> <RET>

PS:<ROOT-DIRECTORY>
-874 Pages assigned
+INF Working pages, +INF Permanent pages allowed

PS:<ACCOUNTS>
14 Pages assigned
+INF Working pages, +INF Permanent pages allowed

PS:<NEW-SUBSYS>
0 Pages assigned
+INF Working pages, +INF Permanent pages allowed

PS:<NEW-SYSTEM>
0 Pages assigned
+INF Working pages, +INF Permanent pages allowed

PS:<OPERATOR>
0 Pages assigned
250 Working pages, 250 Permanent pages allowed

PS:<SPOOL>
0 Pages assigned
+INF Working pages, +INF Permanent pages allowed

PS:<SUBSYS>
3111 Pages assigned
+INF Working pages, +INF Permanent pages allowed

PS:<SYSTEM>
1624 Pages assigned
+INF Working pages, +INF Permanent pages allowed

PS:<SYSTEM-ERROR>
1 Pages assigned
+INF Working pages, +INF Permanent pages allowed

PS:<UETP>
0 Pages assigned
100000 Working pages, 100000 Permanent pages allowed

PS:<UETP.LIB>
1632 Pages assigned
4000 Working pages, 4000 Permanent pages allowed

PS:<UETP.RUN>
0 Pages assigned
500 Working pages, 500 Permanent pages allowed

Total of 5508 Pages assigned, in 12 directories.
58056 Pages free on PS:, 17944 Pages used.
$
```

Figure 2-2:  Directories on the Public Structure

| 2.9   CREATING THE DUMP.EXE FILE
|
| To record system failures, create  the  DUMP.EXE  file  by  performing
| Steps 56 through 58.


➡ Step 56:   Type RUN PS:<SUBSYS>MAKDMP.EXE and press the RETURN key.

To create the DUMP.EXE file, which records any system  failures,  type
RUN PS:<SUBSYS>MAKDMP.EXE.   The system prints the prompt MAKDMP>.

      $RUN PS:<SUBSYS>MAKDMP.EXE <RET>
      MAKDMP>

                              NOTE

          If you do not know how much memory  your  system  has,
          type  the   HELP command and press the RETURN key after
          the system prints MAKDMP>.  MAKDMP prints examples  of
          physical  memory size with the corresponding number of
          words.


➡ Step 57:   Type CREATE PS:<SYSTEM>DUMP.EXE.1 memory-size and press  the
             RETURN key.

To overwrite the existing DUMP.EXE file with a new DUMP.EXE file, type
CREATE   PS:<SYSTEM>DUMP.EXE.1 memory-size.  Be sure to enter the total
amount of memory your system has.  The following  example  uses  2048K
words as the memory size.

|     MAKDMP>CREATE PS:<SYSTEM>DUMP.EXE.1 2048 <RET>
|     [Dump file: <SYSTEM>DUMP.EXE.1 created]
|     MAKDMP>


➡ Step 58:  Type EXIT and press the RETURN key.

Type EXIT to end the MAKDMP program and return to TOPS-20 command
level.

      MAKDMP>EXIT <RET>
      $

                              NOTE

          If in the future you add  some  additional  memory  to
          your  system, you should recreate the DUMP.EXE file to
          allow it to accommodate the additional memory.

# CHAPTER 3

## TAILORING THE SYSTEM

After you have installed the bundled TOPS-20 software from the Installation Tape, tailor your system for your specific needs.

1. Select a monitor that is correct for your system.

2. Change the system name.

3. Create system defaults for terminal speeds, dial-up lines, system logical names, magnetic tape drive numbers, line printer parameters, local time zone, directory parameter setting, account validation, performance improvements, scheduler controls, file archiving and migration parameters, tape drive allocation, accounting shift changes, assigning MSCP-served disk drives, daylight savings time, remote line conditions, controlling system message levels, and network information. These defaults are set in the configuration command file.

4. Change the operator's password and user group.

5. Create the directory PS:<REMARKS>.

6. Create the PS:<SYSTEM>LPFORM.INI file.

## 3.1 SELECTING A TOPS-20 MONITOR

At this time you are running the TOPS-20 monitor 2060-MONBIG.EXE. You should now select the monitor that most closely meets your system's requirements. Choose a monitor that supports at least:

1. As much memory as your system contains. A monitor that supports less memory than your system contains will not use all available memory.

2. The number of terminal lines you need. Do not count the operator's console in this number. Just count the local terminal lines and remote lines.

3. The number of user jobs that you plan to run, plus two (one operator job and job 0). For example, if you expect to run 20 user jobs, the monitor you select should support at least 22 jobs.

4. The number of pseudo-terminals that you need. The system needs at least two pseudo-terminals, one for the PTYCON program to run the operator program OPR and one for unplanned situations that may arise.

For example, if you want to run five pseudo-terminals in your batch system, you need a monitor that supports at least seven pseudo-terminals.

5. The number of peripheral devices on your system.

6. The number of LAT (Local Area Transport) lines on your system.

All monitors are stored in the directory <SYSTEM>. They all run timesharing and batch concurrently. Do not select a monitor that has fewer resources than you need, or a monitor that is unnecessarily large. The TOPS-20 monitors and their characteristics are listed below. Refer to Table 3-1 for the maximum structure size.

**2060-MONBIG.EXE**    A big timesharing monitor. This monitor supports:

    100 jobs
     96 lines
     64 LAT lines
     30 pseudo-terminals
   4MEG of memory
      8 magnetic tape drives
      2 line printers
      1 card reader
    120 million words of disk storage (six RP04, three RP06, one RP07, three RP20 spindles, two RA60, or one RA81) per structure
 10000 pages for swapping space

**2060-MONMAX.EXE**    The largest timesharing monitor. This monitor supports:

    128 jobs
    128 lines
    128 LAT lines
     50 pseudo-terminals
   4MEG of memory
     16 magnetic tape drives
      2 line printers
      1 card reader
    120 million words of disk storage (six RP04, three RP06, one RP07, three RP20 spindles, two RA60, or one RA81) per structure
 15000 pages for swapping space

Table 3-1:  Maximum Structure Size

| Type of Disk Drive | Max. No. Packs Per Structure | No. Pages Per Pack * |
|---|---|---|
| RP04 | 6 | 38,000 |
| RP06 | 3 | 76,000 |
| RP07 | 1 | 216,376 |
| RP20 | 5 | 201,420 |
| RA60 | 6 | 90,516 |
| RA81 | 5 | 200,928 |

* a page = 512 36-bit words

| In Steps 59 and 60, you choose the monitor most appropriate for your
| needs and copy it to the file MONITR.EXE.


➡ Step 59:   Type CONNECT PS:<SYSTEM> and press the RETURN key.

Connect to the directory PS:<SYSTEM> by typing the CONNECT command.

```
$CONNECT PS:<SYSTEM> <RET>
$
```

|                        TCP/IP Installations
|
|        If you are performing a TCP/IP installation, you  must
|        choose  a  TOPS-20  monitor  at  this time.  After you
|        restore the TCP/IP Distribution tape, you will be able
|        to choose a TCP/IP monitor.


➡ Step 60:   Type COPY montyp.EXE.* MONITR.EXE.* and press the RETURN
             key.

Use the COPY command to copy the monitor that you have selected to the
file  MONITR.EXE.   "Montyp"  designates  the type of monitor you have
selected for your system.  When the copy  is  successfully  completed,
the   system  prints  an  OK  message.   The  different  monitors  are
2060-MONBIG.EXE and 2060-MONMAX.EXE.

```
$COPY montyp.EXE.* MONITR.EXE.* <RET>
montyp.EXE.n => MONITR.EXE.n [OK]
$
```

Error:    If you type the wrong name, reissue the command.


## 3.2  CHANGING THE SYSTEM NAME

Whenever  a  user  types  <CTRL/C>  before  logging  in  or  gives  the
INFORMATION VERSION command, the system prints a message similar to:

|        TOPS-20 BIG SYSTEM, TOPS-20 Monitor n.n(nnnn)
|
| where n.n(nnnn) is the  version  and  edit  number  of  the  operating
| system.   You  can  change  the  system  name  "TOPS-20 BIG SYSTEM" by
  entering the name you want into the  file  PS:<SYSTEM>MONNAM.TXT.    If
  the  name  contains  lowercase  letters,  give the command TERMINAL NO
  RAISE before entering the name.

The text of the system name can contain up  to  105  characters.   For
practical  purposes,  it  should  not exceed 32 characters to fit on a
| single 72-character line of terminal output.  Steps 61 through 63 show
  how to change the system name to "Installation-test System" and how to
  change the new system name to the abbreviated name "Instal-tst."


➡ Step 61:   Type TERMINAL NO RAISE and press the RETURN key (optional).

If you want lowercase letters in the system name,  type  the  TERMINAL
command.  Make sure that the CAPS LOCKED button on the terminal is up.

```
$TERMINAL NO RAISE <RET>
$
```

➡Step 62:   Type COPY TTY:  MONNAM.TXT and press the RETURN  key.   Then
            enter the system name and type <CTRL/Z>.

| Change the system name by entering the name you  want  into  the  file
| PS:<SYSTEM>MONNAM.TXT.   The   system   name   should   not  exceed  32
| characters.
|
| Use the COPY command to give the system a new system name.  After  you
| enter  the  command,  the system waits for you to type the new name of
| your system.  After you enter the new system name, type <CTRL/Z>.   In
| the example, the new system name is Installation-test System.

        $COPY TTY: MONNAM.TXT <RET>
         TTY: => MONNAM.TXT.1

        Installation-test System  ^Z
        $

You can change this file at any time, but the system reads the  system
name only when the monitor is started (whenever you boot the system).

➡Step 63:   Type COPY TTY:  TAPNAM.TXT and press the RETURN key.   Enter
            the abbreviated system name and type <CTRL/Z>.

You should also change the system name that will  be  written  on  the
volume  header  label  of any tape initialized by users of the system.
Do  this  by  entering  the  name  you  want  into  the  file
PS:<SYSTEM>TAPNAM.TXT.   This  system  name  must contain ten or fewer
characters, so you will probably have to abbreviate the name given  in
the  previous  step.   The example shows how to change the system name
(that appears on tape labels written by the system) to "Instal-tst."

| Give the system an abbreviated name with the COPY command.  After  you
| enter  the  command,  the system waits for you to type the abbreviated
| system name.  After  you  enter  the  abbreviated  system  name,  type
| <CTRL/Z>.  In the example, the abbreviated system name is Instal-tst.

        $COPY TTY: TAPNAM.TXT <RET>
         TTY: => TAPNAM.TXT.1

        Instal-tst  ^Z
        $

## 3.3   CREATING SYSTEM DEFAULTS IN THE CONFIGURATION COMMAND FILE

| You must create a configuration command file to define:

| Terminal line speeds        Logical names
| Magnetic tape drives        Line printers
| Local time zone             Directory parameter setting
| Account validation          Performance improvements
| Scheduler controls          File archiving and migration
| Tape drive allocation       Accounting shift changes
| MSCP-served disk drives     Daylight savings time
| Remote line conditions      System level messages
| Network information

The next time the system starts,  the  SETSPD  (SET  System  Parameter
Defaults)  program  uses the definitions entered into this file.  This
program runs automatically at system startup.

The formats of the commands are described in Sections 3.3.1 through
3.3.18 (Steps 64 through 93). You can include comment lines if they
are preceded by exclamation points.

NOTE

The following sections describe how to create the
configuration command file. These steps illustrate
the use of the EDIT editor program. You can use any
editor of your choice, as long as you accomplish the
goal of each step.

**⇒ Step 64: Type CREATE 6-1-CONFIG.CMD and press the RETURN key.**

Use EDIT to CREATE the 6-1-CONFIG.CMD file. (Refer to the TOPS-20
EDIT Reference Manual for more information on how to use EDIT.) The
system prints the file name and the line number.

        $CREATE 6-1-CONFIG.CMD <RET>
        Input: PS:<SYSTEM>6-1-CONFIG.CMD.1
        00100

Do not confuse the CREATE command, which creates a file, with the
privileged ^ECREATE command, which creates a directory.


## 3.3.1 Setting Terminal Speeds

Whenever the system starts, the SETSPD program reads the TERMINAL
commands from the configuration command file and sets the terminal
lines to the specified speeds.

Users can change the speeds of their terminals by giving the TERMINAL
SPEED command. When one user logs out and another user logs in on the
same terminal, the system does not change the line speed back to the
default listed in the configuration command file. However, if the
line is defined as REMOTE, the speed is changed back after the line is
disconnected. Note that the operator can change the speed of the line
by giving the privileged ^ESET command.

To set the default speed for a particular line, enter a command in the
following format into the configuration command file:

        TERMINAL line SPEED input output

where:

| Item | Identifies |
|------|-----------|
| line | An octal line number, or a range of lines in the form line-line. Your DIGITAL Field Service Representative will provide you with a list of line numbers and the corresponding locations. (Refer to Section 1.2.) |
| input | The input speed (to the system) of the terminal(s). |
| output | The output speed of the terminal(s). If you do not specify both output and input, the system assumes that the output speed is the same as the input speed. |

Valid terminal speeds are:

```
        Ø (to shut off the line)        3ØØ
       5Ø                               6ØØ
       75                              12ØØ
      11Ø                              18ØØ
      134 (actually 134.5)            24ØØ
      15Ø                             48ØØ
      2ØØ                             96ØØ
```

NOTE

If you do not specify a speed for a line, the system
uses 3ØØ for both input and output. If you have lines
in the terminal controller (the DH11) that are not
installed, you should define those lines with a speed
of Ø. Otherwise, the lines run open, causing
degradation in system performance.

● Line numbers are always octal (refer to Table 3-2).

Table 3-2:  DECSYSTEM-2Ø Terminal Line Numbers

| Number of Lines (Decimal) | Line Numbers (Octal) for Directly-Connected Lines |
|---|---|
| 8 | 1 to 1Ø |
| 16 | 1 to 2Ø |
| 32 | 1 to 4Ø |
| 64 | 1 to 1ØØ |
| 96 | 1 to 14Ø |
| 128 | 1 to 2ØØ |

**Step 65:   Type the TERMINAL SPEED commands.**

Type your required TERMINAL SPEED commands and press the RETURN key
after each definition..  You can include comment lines by preceding
each with an exclamation point.  The lines shown are only an example.
Determine the most useful definitions for the system according to the
terminals that you have.

```
ØØ1ØØ    ! Terminal Speeds <RET>
ØØ2ØØ    ! Line 1 has input=96ØØ and output=96ØØ <RET>
ØØ3ØØ    TERMINAL 1 SPEED 96ØØ <RET>
ØØ4ØØ    ! Lines 2 to 2Ø have input and output=24ØØ <RET>
ØØ5ØØ    TERMINAL 2-2Ø SPEED 24ØØ <RET>
ØØ6ØØ    ! Lines 23 to 4Ø are shut off <RET>
ØØ7ØØ    TERMINAL 23-4Ø SPEED Ø <RET>
ØØ8ØØ
```

### 3.3.2  Defining Dial-Up (Remote) Lines

For each dial-up line, you have the option of declaring that line to
have a specified speed or you can declare a line to be autobaud. If a
dial-up line is declared an autobaud line, the line is automatically
set to 96ØØ baud at system startup.

To declare a line autobaud, replace the word SPEED with the word AUTO in the TERMINAL command and do not specify any input and output speeds.

Include a TERMINAL command for each dial-up line. Use the same form as described in Section 3.3.1, but insert the word REMOTE after the line number.

If you do not use the AUTO argument and omit the output speed, the system assumes that the output speed is the same as the input speed. The command format is:

        TERMINAL line REMOTE SPEED input output

                or

        TERMINAL line REMOTE AUTO

Whenever a user starts a job on a dial-up line, and AUTO has not been specified, the system sets the speed of that line to the speed specified in the configuration command file.

**➡ Step 66:   Define REMOTE lines.**

If you have remote lines, obtain the line numbers from your DIGITAL Field Service Representative and enter the proper commands in the configuration command file. Press the RETURN key after each definiton. The lines shown are only an example. You must determine the correct commands for your own system.

        00800    ! Lines 21 and 22 are dialup lines <RET>
        00900    TERMINAL 21 REMOTE SPEED 9600 <RET>
        01000    TERMINAL 22 REMOTE AUTO <RET>
        01100

### 3.3.3  Defining System Logical Names

Insert a command in the following format to define any special system logical names that you require. These logical names are defined when the system starts. The command format is:

        DEFINE name definition-list

The logical name SYS: defaults to PS:<SUBSYS> if you do not define it in the configuration command file. Refer to the TOPS-20 System Manager's Guide for descriptions of logical names.

**➡ Step 67:   Type the system logical name definitions.**

Enter any system logical name definitions into the configuration command file. Press the RETURN key after each definition. The lines shown are recommended definitions. PS:<directory> indicates that you can use a directory of your own choosing. Be sure to include the correct structure names for your system if you are using a structure name other than PS:.

```
        Ø11ØØ    DEFINE NEW: PS:<NEW>,SYS: <RET>
        Ø12ØØ    DEFINE OLD: PS:<OLD>,SYS: <RET>
        Ø13ØØ    DEFINE HLP: SYS: <RET>
        Ø14ØØ    DEFINE SERR: PS:<SYSTEM-ERROR> <RET>
|       Ø15ØØ    DEFINE DMP: PS:<directory> <RET>
|       Ø16ØØ    DEFINE POBOX: PS: <RET>
|       Ø17ØØ
```

3.3.3.1  Selecting an Editor - You have the option of selecting the
default editing program (editor) with which your users create and edit
files using the CREATE and EDIT commands.  If you want them to use TV,
| enter  the  command  DEFINE EDITOR:  SYS:TV.EXE into the configuration
| command file.  If you do not put this command into  the  configuration
| command file, the default editor used for the CREATE and EDIT commands
will be the EDIT program.

By defining the logical name EDITOR:  for their own  jobs,  users  can
override  your  choice  of  default editor, as long as the editor they
specify is available at your installation.  The following step  is  an
example of making TV the default editor for your installation.

➡ Step 68:   Type DEFINE EDITOR:  SYS:TV.EXE and press the RETURN key.

If you are using the TV editor as your system's default  editor,  type
DEFINE EDITOR:  SYS:TV.EXE.

```
        Ø17ØØ    DEFINE EDITOR: SYS:TV.EXE <RET>
        Ø18ØØ
```

                                  NOTE

           If you want your system's default  editor  to  be  the
           EDIT  program,  do  not  put a DEFINE EDITOR:  command
|          into the configuration command file.


3.3.4  Defining Magnetic Tape Logical Unit Numbers

The system assigns logical unit numbers to magnetic tape  drives.   It
starts with the lowest numbered unit on the lowest numbered controller
on the lowest numbered channel, and proceeds upward.  If  the  cabling
connecting  the  tape  drives  to the system changes, the logical unit
numbers referencing the tape drives can also change, unless you  enter
| the  appropriate  commands  in  the  configuration  command file.  The
| commands in this file guarantee that the physical drives  always  have
the same logical unit numbers.

Request the tape drive serial numbers from your DIGITAL Field  Service
Representative,  or open the back door of the magnetic tape drives and
| look on the sticker containing the number.  The last 4 digits  of  the
| serial number are the most significant.  Use only the last four digits
| of the number to identify the  magnetic  tape  drive  in  the  MAGTAPE
| command.
|
|                                 NOTE
|
|          SETSPD will not  recognize  tape  drives  with  serial
|          numbers longer than 4 characters.

| To define magnetic tape drives, use the MAGTAPE command, in the
| following format, in the configuration command file:

        MAGTAPE unit serial slave

where:

| Item | Identifies |
|------|-----------|
| unit | The logical unit number to be assigned to the drive. The unit number can be 0, 1, 2, 3, 4, 5, 6, or 7. |
| serial | The last four digits of the serial number. (Leading zeros can be omitted.) |
| slave | The type of tape drive; for example, TU72, TU45. |

                            NOTE

        If no slave number is entered, the system assumes that
        the slave number is TU45.


➡ Step 69:    Define the magnetic tape drive logical unit numbers.

Enter the definitions of the magnetic tape drive logical unit numbers
| into the configuration command file. Press the RETURN key after each
| definiton. The commands shown are only examples. You must determine
the correct definitions for your system.

        01800    MAGTAPE 0 24      TU45 <RET>
        01900    MAGTAPE 1 2001    TU77 <RET>
        02000    MAGTAPE 2 2002    TU71 <RET>
        02100    MAGTAPE 3 2003    TU70 <RET>
        02200    MAGTAPE 4 1500    TU72 <RET>
        02300


3.3.5  Defining Line Printer Parameters

The characteristics of several line printers that can be ordered with
your DECSYSTEM-20 are listed in Table 3-3. Ask your DIGITAL Field
Service Representative which type you have.

Table 3-3:    DECSYSTEM-20 Line Printers

| Model | VFU | Lowercase | Identification |
|-------|-----|-----------|----------------|
| LP20A<br>LP20B | PROGRAMMABLE<br>PROGRAMMABLE | NO<br>YES | Four buttons on the right top panel, with the top button being POWER ON ALARM/CLEAR. |
| LP20C<br>LP20D | PROGRAMMABLE<br>PROGRAMMABLE | NO<br>YES | Four buttons on the right top panel, with the top button being POWER ON ALARM/CLEAR. |
| LP20F<br>LP20H | TAPE<br>TAPE | NO<br>YES | Four rocker switches on the left of the top panel. |

| Sections 3.3.5.1 and 3.3.5.2 (Steps 70 and 71) describe the PRINTER
| commands.


3.3.5.1 Specifying the VFU File - The VFU (Vertical Formatting Unit) is used to control paper advance through the line printer. For a line
| printer with a programmable VFU, place a command in the configuration
| command file that specifies the file to program the VFU. For installation purposes, use SYS:NORMAL.VFU. The command format is:

        PRINTER n LOWERCASE VFU dev:<dir>name.typ

where:

| Item | Identifies |
|------|-----------|
| n | The unit number of the printer. |
| LOWERCASE | The printer has the 96-character set. If your printer has the 64-character set, do not include the word LOWERCASE in the command. |
| VFU | The type of file specified by the command. |
| dev:<dir>name.typ | The location of the VFU file. |

| Examples of typical VFU commands in the configuration command file
| are:

| Printer | VFU Command |
|---------|-------------|
| LP20A or LP20C | PRINTER 0 VFU SYS:NORMAL.VFU |
| LP20B or LP20D | PRINTER 0 LOWERCASE VFU SYS:NORMAL.VFU |

Note that you do not need VFU commands for LP20F and LP20H line printers.


➡ Step 70:  Type the VFU command and press the RETURN key.

If you have one or more line printers with programmable VFUs, enter
| the appropriate PRINTER commands in the configuration command file.

        02300    PRINTER 0 LOWERCASE VFU SYS:NORMAL.VFU <RET>
        02400    PRINTER 1 VFU SYS:NORMAL.VFU <RET>
        02500


3.3.5.2 Specifying the RAM File - You must identify a file that will load the translation RAM (Random-Access Memory). This RAM controls the way in which each character is treated by the line printer. Use SYS:LP96.RAM for line printers that have lowercase letters. Use SYS:LP64.RAM for printers that do not have lowercase letters. The command format is:

        PRINTER n LOWERCASE RAM dev:<dir>name.typ

where:

| Item | Identifies |
|------|-----------|
| n | The line printer unit number. |
| LOWERCASE | The printer has the 96-character set. If your printer has the 64-character set, do not include the word LOWERCASE in the command. |
| RAM | The type of file specified by the command. |
| dev:<dir>name.typ | The file that contains the translation RAM. |

| Examples of typical RAM commands in the configuration command file
| are:

| Printer | RAM Command |
|---------|-------------|
| LP20A, LP20C, or LP20F | PRINTER 0 RAM SYS:LP64.RAM |
| LP20B, LP20D, or LP20H | PRINTER 0 LOWERCASE RAM SYS:LP96.RAM |

➡ Step 71: Type the RAM command and press the RETURN key.

| Enter the appropriate RAM command into the configuration command file.

```
02500    PRINTER 0 LOWERCASE RAM SYS:LP96.RAM <RET>
02600    PRINTER 1 RAM SYS:LP64.RAM <RET>
02700
```

### 3.3.6  Defining the Local Time Zone

The time zone in which your installation is located can be represented as the number of hours west or east of Greenwich. For example, Eastern Standard Time is zone 5; Central Standard Time is zone 6; Mountain Standard Time is zone 7; and Pacific Standard Time is zone 8.
| To set your local time zone, you can enter the following command in
| the configuration command file:

    TIMEZONE n

where n is a decimal number between -12 and 12 inclusive. Zones -12 and 12 represent the same clock time but on opposite sides of the international date line. If you do not specify a time zone in the
| configuration command file, the time zone will default to zone 0,
| signifying Greenwich mean time.

➡ Step 72: Type the TIMEZONE n command and press the RETURN key.

| Enter the TIMEZONE n command into the configuration command file.

```
02700    TIMEZONE 5 <RET>
02800
```

### 3.3.7  Directory Parameter Setting

You have the option of allowing users to change their directory
parameters. If you decide to allow users to do this, no command is
entered into the configuration command file, because the system
default is to ENABLE DIRECTORY-PARAMETER-SETTING. However, if you
decide not to allow users to change their directory parameters, you
should enter the command DISABLE DIRECTORY-PARAMETER-SETTING into the
configuration command file. When this command is given, it prevents
the user from changing any of his directory parameters unless he has
WHEEL or OPERATOR capabilities. Step 73 is an example of disallowing
users from changing their directory parameters.

➡ Step 73:  Type DISABLE DIRECTORY-PARAMETER-SETTING and press the
RETURN key.

To prevent users from changing their directory parameters, type
DISABLE DIRECTORY-PARAMETER-SETTING.

```
02800    DISABLE DIRECTORY-PARAMETER-SETTING <RET>
02900
```

NOTE

If the default is taken, users are allowed to change
some of their directory parameters with the SET
DIRECTORY commands.

### 3.3.8  Account Validation

You have the option of requiring all users to enter a valid account
name when they are logging in to the system. If you decide to require
valid accounts, you do not have to enter any command into the
configuration command file, because the system default is to ENABLE
ACCOUNT-VALIDATION. However, if you decide not to validate accounts,
you must enter the command DISABLE ACCOUNT-VALIDATION into the
configuration command file. Step 74 is an example of not using the
account validation facility.

➡ Step 74:  Type DISABLE ACCOUNT-VALIDATION and press the RETURN key.

If you are not validating accounts, type DISABLE ACCOUNT-VALIDATION.

```
02900    DISABLE ACCOUNT-VALIDATION <RET>
03000
```

### 3.3.9  Performance Improvements

Sections 3.3.9.1 and 3.3.9.2 (Steps 75 and 76) describe full latency
optimization and working set swapping, respectively.

3.3.9.1  Full Latency Optimization - When you enter the command ENABLE
FULL-LATENCY-OPTIMIZATION into the configuration command file, the
number of revolutions needed to read pages off the disk is minimized.

NOTE

Before you can use this performance feature, you must obtain from your DIGITAL Field Service Representative the following information about your hardware:

1. If you have a KL10-E processor, it must be at revision level 3 or later.

2. If you have board M7772, it must be at version level E and CS revision level F; or you may have board M7786.

If your hardware does not meet these requirements, take the default: DISABLE FULL-LATENCY-OPTIMIZATION.

**➡ Step 75:** Type ENABLE FULL-LATENCY-OPTIMIZATION and press the RETURN key.

If your hardware meets the above requirements, type ENABLE FULL-LATENCY-OPTIMIZATION.

```
03000    ENABLE FULL-LATENCY-OPTIMIZATION <RET>
03100
```

3.3.9.2 Working Set Swapping - If you enter the command ENABLE WORKING-SET-PRELOADING into the configuration command file, the entire working set of a process is brought into memory at once when it is the process's turn to run. Otherwise, this action occurs on a page-by-page basis.

NOTE

You should enable working set swapping only if your system runs large compute-bound jobs. However, if your system runs many interactive jobs or if you are unsure which description better fits your system, take the default: DISABLE WORKING-SET-PRELOADING.

**➡ Step 76:** Type ENABLE WORKING-SET-PRELOADING and press the RETURN key.

If your system runs large compute-bound jobs, type ENABLE WORKING-SET-PRELOADING.

```
03100    ENABLE WORKING-SET-PRELOADING <RET>
03200
```

3.3.10 Scheduler Controls

Sections 3.3.10.1 and 3.3.10.2 (Steps 77 through 80) describe bias controls and class scheduling, respectively.

3.3.10.1 **Bias Controls** - You have the option of deciding how your system's CPU time is to be divided between interactive and batch jobs. You do this by entering the command BIAS n into the configuration command file, where n is any integer between 1 and 20. The smaller the value of n, the larger the percentage of CPU time that is given to interactive jobs. If you do not give this command, a default value of 11 will be taken, which provides a balance between good interactive response and reasonable throughput.

➡ Step 77:  Type the BIAS n command and press the RETURN key.

The example shows how to enter a BIAS n command with a value of 6, which favors interactive jobs. You must determine the correct value of n for your own system.

```
03200    BIAS 6 <RET>
03300
```

3.3.10.2 **Class Scheduling** - You can use class scheduling to divide your system's CPU time among different classes of jobs. Class scheduling assigns percentages of CPU time to jobs according to their account or according to a policy program written especially for your site.

NOTE

If you do not want to use class scheduling, you do not have to enter any command into the configuration command file, because the system default is to DISABLE CLASS-SCHEDULING.

If you use either kind of class scheduling, you can allocate any unused CPU time (windfall) among active jobs, or withhold it from all jobs. The command for enabling class scheduling using a policy program and allocating windfall is ENABLE CLASS-SCHEDULING POLICY-PROGRAM ALLOCATED. The command for enabling class scheduling using a policy program and withholding windfall is ENABLE CLASS-SCHEDULING POLICY-PROGRAM WITHHELD. If you enable class scheduling using a policy program, you cannot also enable class scheduling using accounts, and should skip to Section 3.3.11 after giving one of these two commands.

If you do not have a policy program to use with class scheduling at your site, you can still enable class scheduling by assigning jobs to classes according to the account under which each job is running. (Refer to the TOPS-20 System Manager's Guide for information about associating accounts with particular classes.) To do this you must first enter commands into the configuration command file, specifying the percentage of CPU time that is to be given to jobs in each class.

➡ Step 78:  Type the CREATE commands for scheduler classes.

You must enter a CREATE command for each class that your system will use, with a different percentage for each class. The sum of the percentages you specify must not add up to more than 100%, although they may add up to less than 100%. If they add up to less than 100%, the percentage of CPU time that is not assigned becomes part of the system's windfall. Press the RETURN key after each CREATE command.

The commands shown are an example of dividing up 75% of the system's CPU time among three classes of jobs. For example, the command CREATE 1 .20 specifies that jobs running under accounts in class 1 are to be given a total of 20% of your system's CPU time. You must supply the correct class numbers and percentages for your own system.

```
03300    CREATE 1 .20 <RET>
03400    CREATE 2 .40 <RET>
03500    CREATE 3 .15 <RET>
03600
```

➡ Step 79:  Type the BATCH-CLASS n command and press the RETURN key. Then assign a percentage to this class with the CREATE command.

Batch jobs can be put into a special class of their own by including the BATCH-CLASS n command, where n is the number of the class you choose for batch jobs. If you do not enter a BATCH-CLASS command, batch jobs are given CPU time according to the class associated with the account of the job's owner at the time of submission. The example creates a class for batch jobs and then assigns 25% of CPU time to this class with the CREATE command. You must enter commands that are appropriate for your system.

```
03600    BATCH-CLASS 4 <RET>
03700    CREATE 4 .25 <RET>
03800
```

➡ Step 80:  Type ENABLE CLASS-SCHEDULING ACCOUNTS ALLOCATED and press the RETURN key.

Now you must enter the command that enables class scheduling using accounts. You must also decide whether to allocate any windfall CPU time to the jobs that are running or to withhold this windfall. The default for this command is ALLOCATED. It is recommended that you take this default.

```
03800    ENABLE CLASS-SCHEDULING ACCOUNTS ALLOCATED <RET>
03900
```

CAUTION

Do not enter the above command (Step 80) into the configuration command file until you have entered the commands shown in Steps 78 and 79. If you enable class scheduling before creating classes, class scheduling will not function properly.

## 3.3.11  File Archiving and Migration Parameters

Sections 3.3.11.1 and 3.3.11.2 (Steps 81 and 82) describe tape recycle periods for use with the file archiving and migration features.

### 3.3.11.1  Archive Tape Recycle Period - TOPS-20 provides a feature that allows off-line storage of selected files on magnetic tape for long periods of time. You can specify for how long these files are saved by inserting a command into the configuration command file

stating, in days, the recycle period of the tapes. For example, to save archival files on tape for five years, you would enter the command, ARCHIVE-TAPE-RECYCLE-PERIOD 1825 (because 5 years x 365 days/year = 1825 days). If you do not insert an
| ARCHIVE-TAPE-RECYCLE-PERIOD command in the configuration command file, a default value of 3650 (ten years) will be taken.

▶ Step 81:   Type the ARCHIVE-TAPE-RECYCLE-PERIOD n command and press the RETURN key.

The example shows how to enter an ARCHIVE-TAPE-RECYCLE-PERIOD n command with a value of 1825 (five years). You must determine a suitable value of n for your own system.

        03900    ARCHIVE-TAPE-RECYCLE-PERIOD 1825 <RET>
        04000

3.3.11.2  Migration Tape Recycle Period - TOPS-20 provides a feature that allows automatic off-line storage of old or little-used files on magnetic tape for short periods of time. You can specify for how long
| these files are saved by inserting a command into the configuration
| command file stating, in days, the recycle period of the tapes. For example, to save migrated files on tape for three months, you would enter the command TAPE-RECYCLE-PERIOD 90 (because 3 months with 30 days/month = 90 days). If you do not insert a TAPE-RECYCLE-PERIOD
| command in the configuration command file, a default value of 180 (six months) will be taken.

▶ Step 82:   Type the TAPE-RECYCLE-PERIOD n command and press the RETURN key.

The example shows how to enter a TAPE-RECYCLE-PERIOD n command with a value of 90 (three months). You must determine a suitable value of n for your own system.

        04000    TAPE-RECYCLE-PERIOD 90 <RET>
        04100

3.3.12   Tape Drive Allocation

| Sections 3.3.12.1 and 3.3.12.2 (Steps 83 and 84) describe putting tape drive allocation into effect, and specifying a response to certain error conditions.

3.3.12.1  Enabling Tape Drive Allocation - TOPS-20 provides for the automatic assignment of tape drives to users who wish to read or write magnetic tapes. In order to use this feature, which also allows your system to read and write the labels of standard labeled tapes, you must insert the command ENABLE TAPE-DRIVE-ALLOCATION into the
| configuration command file. If you do not give this command, your users must assign tape drives with the TOPS-20 ASSIGN command and their labeled tapes will be treated as unlabeled tapes.

**Step 83:** **Type ENABLE TAPE-DRIVE-ALLOCATION and press the RETURN key.**

To allow labeled tape processing and the automatic assignment of tape drives, type ENABLE TAPE-DRIVE-ALLOCATION.

```
Ø41ØØ    ENABLE TAPE-DRIVE-ALLOCATION <RET>
Ø42ØØ
```

**3.3.12.2 Treatment of Unrecognized Tapes** - If you enabled tape drive allocation in the previous step, you must decide what action the system should take if a labeled tape is mounted improperly (for example, the user specifies the wrong label type or density). If you want the system to unload the tape so that it cannot be accidentally erased, you must insert the command TAPE-RECOGNITION-ERRORS UNLOAD into the configuration command file. If you do not give this command, the system will treat improperly mounted labeled tapes as unlabeled tapes and will continue processing them. That is, the system default is TAPE-RECOGNITION-ERRORS REGARD-AS-UNLABELED.

**Step 84:** **Type TAPE-RECOGNITION-ERRORS UNLOAD and press the RETURN key.**

To force the automatic unloading of any tapes that are improperly mounted, type TAPE-RECOGNITION-ERRORS UNLOAD.

```
Ø42ØØ    TAPE-RECOGNITION-ERRORS UNLOAD <RET>
Ø43ØØ
```

**3.3.13 Accounting Shift Changes**

The accounting facility allows you to provide varied billing rates for system use at different times. You do this by entering commands into the configuration command file specifying the time of day for each rate change. You should give one command for each time the rate changes. Use days of the week or the keywords WEEKDAYS, WEEKENDS, and ALL, and times in either 24-hour or AM/PM format. (Refer to the TOPS-2Ø System Manager's Guide for detailed information about accounting shift changes.)

**Step 85:** **Type the CHANGE commands for accounting shift changes.**

CHANGE commands are entered into the configuration command file to provide special rates for evenings and weekends. Press the RETURN key after entering each command. This is only an example. You must provide the correct days and times for your own system.

```
Ø43ØØ    CHANGE  9:ØØ WEEKDAYS <RET>
Ø44ØØ    CHANGE 17:ØØ WEEKDAYS <RET>
Ø45ØØ    CHANGE  Ø:ØØ SATURDAY <RET>
Ø46ØØ
```

NOTE

You do not have to enter CHANGE commands into the configuration command file. If you do not enter any CHANGE commands, the accounting shift change feature of system accounting is not used.

## 3.3.14  Assigning MSCP-served Disk Drives

MSCP (Mass Storage Communication Protocol) is responsible for granting access to MASSBUS disks across the CI (Computer Interconnect).  To have MSCP grant access to disks across the CI, use the ALLOW command, in the following format, in the configuration command file:

        ALLOW    drive-type    serial-number

where:

        drive-type = RP04, RP06, RP07, or RP20

        serial-number = serial number of the disk drive

To determine the disk drive's serial number, use the OPR command  SHOW CONFIGURATION.  (See the TOPS-20 Operator's Command Language Reference Manual for information about this command.)  The default for all disks is 'not ALLOWed.'

**➡ Step 86:  Define MSCP-served disk drives.**

Enter the ALLOW command for each disk drive to be served by MSCP and press the RETURN key.  (Determine the disk drive's serial number with the OPR command SHOW CONFIGURATION.)  The commands shown are only examples.  You must determine the correct definitions for your system.

        04600    ALLOW    RP06    1243 <RET>
        04700    ALLOW    RP20    3327 <RET>
        04800

## 3.3.15  Specifying Daylight Savings Time

You can specify one of three daylight savings time  (DST)  options  in the configuration command file.  The three options are:

- AUTOMATIC (change at the prescribed time; that is, set DST to automatically  go  on  the  last  Sunday  in  April  and  to automatically go off the last Sunday in October)

- OFF (never do DST conversions)

- ON (always do DST conversions)

The most convenient option is AUTOMATIC, but you must determine  which option is best for your site.

**➡ Step 87:  Type the DAYLIGHT n command and press the RETURN key.**

To specify the DST option for your system, type DAYLIGHT  followed  by the appropriate argument.  The following is only an example.  You must enter the correct definition for your system.

        04800    DAYLIGHT ON <RET>
        04900

### 3.3.16 Specifying Remote Line Conditions

You can specify whether or not a remote line will be hung up after the LOGOUT command is issued on logged-out or logged-in terminal jobs. Setting these parameters can be especially useful for dial-up lines or for resource contention devices such as terminal concentrators. To specify whether a remote line will be hung-up, you must enter either an ENABLE or DISABLE command in the configuration command file.

➡ <u>Step 88</u>: <u>Type the ENABLE HANGUP-IF-LOGGED-IN and ENABLE HANGUP-IF-LOGGED-OUT commands.</u>

To enable the remote line to be disconnected after a logout command is issued on logged-out or logged-in terminal jobs, type the following two commands into the configuration command file. Press the RETURN key after each command.

```
04900   ENABLE   HANGUP-IF-LOGGED-IN <RET>
05000   ENABLE   HANGUP-IF-LOGGED-OUT <RET>
05100
```

### 3.3.17 Controlling System Message Levels

You have the option of notifying users of certain events, such as resource problems. The following two commands allow you to control what class of messages users will receive.

$$\begin{Bmatrix} ENABLE \\ DISABLE \end{Bmatrix}$$ SYSTEM-MESSAGE-LEVEL-0

will inform (or not inform) users about resource problems.

$$\begin{Bmatrix} ENABLE \\ DISABLE \end{Bmatrix}$$ SYSTEM-MESSAGE-LEVEL-1

will inform (or not inform) users of operational type messages.

➡ <u>Step 89</u>: <u>Type the ENABLE SYSTEM-MESSAGE-LEVEL-n commands and press the RETURN key.</u>

To enable users to receive both types of system messages, type the ENABLE SYSTEM-MESSAGE-LEVEL-n commands.

```
05100   ENABLE SYSTEM-MESSAGE-LEVEL-0 <RET>
05200   ENABLE SYSTEM-MESSAGE-LEVEL-1 <RET>
05300
```

### 3.3.18 Network Information

Enter the following command lines (Steps 90 and 91) into your configuration command file in order to identify your system and to turn off LAT (Local Area Transport) terminal servers.

➡ Step 90: Type NODE nodename nodenumber and press the RETURN key.

| Use the NODE command to define your system's node name and node
| number. By providing this information in the configuration command
| file, you enable several processes to work properly. In the example,
| the node name is DISNEY and the node number is 8.164.
|
| 05300    NODE DISNEY 8.164 <RET>
| 05400


➡ Step 91: Type LAT-STATE OFF and press the RETURN key.

| Type the LAT-STATE OFF command if you are not using terminal servers.
|
| 05400    LAT-STATE OFF <RET>
| 05500
|
| For information on installing LAT terminal servers, see the
| installation guide for any LAT terminal servers that you have.
|
| Update Installations
|
| Proceed to Appendix A, Section A.2.5, Step 43, to
| continue your update installation.
|
|
|
| 3.4  SAVING THE CONFIGURATION COMMAND FILE
|
| Perform Steps 92 and 93 to save and read the configuration command
| file.


➡ Step 92: Press the ESCape key. Type EU and press the RETURN key.

| When you have finished creating the configuration command file, press
| the ESCape key to end insert mode. The system prints the EDIT prompt
| (*). Then type EU and press the RETURN key to save the file. The
| system prints the file name and generation number, then the ENABLEd
| prompt ($).

      05500  $
      *EU <RET>

|     [PS:<SYSTEM>6-1-CONFIG.CMD.1]
      $


➡ Step 93: Enter TYPE PS:<SYSTEM>6-1-CONFIG.CMD and press the RETURN
           key.

      To be sure that the file is in the proper directory, use the TYPE
      command. The system prints the contents of the file on your terminal
|     (see Figure 3-1). The file in Figure 3-1 is only an example.

      Error:   If the system cannot find the file or prints the wrong file,
               give the following COPY command to place the file in
               PS:<SYSTEM>:

|              $COPY 6-1-CONFIG.CMD PS:<SYSTEM>6-1-CONFIG.CMD <RET>

               (Refer to the TOPS-20 EDIT Reference Manual if you want to
               change the file.)

```
$TYPE PS:<SYSTEM>6-1-CONFIG.CMD <RET>
! Terminal Speeds
! Line 1 has input=9600 and output=9600
TERMINAL 1 SPEED 9600
! Lines 2 to 20 have input and output=2400
TERMINAL 2-20 SPEED 2400
! Lines 23 to 40 are shut off
TERMINAL 23-40 SPEED 0
! Line 21 and 22 are dialup lines
TERMINAL 21 REMOTE SPEED 300
TERMINAL 22 REMOTE AUTO
DEFINE NEW: PS:<NEW>,SYS:
DEFINE OLD: PS:<OLD>,SYS:
DEFINE HLP: SYS:
DEFINE SERR: PS:<SYSTEM-ERROR>
DEFINE DMP: PS:<directory>
DEFINE POBOX: PS:
DEFINE EDITOR: SYS:TV.EXE
MAGTAPE 0 24 TU45
MAGTAPE 1 2001 TU77
MAGTAPE 2 2002 TU71
MAGTAPE 3 2003 TU70
MAGTAPE 4 1500 TU72
PRINTER 0 LOWERCASE VFU SYS:NORMAL.VFU
PRINTER 1 VFU SYS:NORMAL.VFU
PRINTER 0 LOWERCASE RAM SYS:LP96.RAM
PRINTER 1 RAM SYS:LP64.RAM
TIMEZONE 5
DISABLE DIRECTORY-PARAMETER-SETTING
DISABLE ACCOUNT-VALIDATION
ENABLE FULL-LATENCY-OPTIMIZATION
ENABLE WORKING-SET-PRELOADING
BIAS 6
CREATE 1 .20
CREATE 2 .40
CREATE 3 .15
BATCH-CLASS 4
CREATE 4 .25
ENABLE CLASS-SCHEDULING ACCOUNTS ALLOCATED
ARCHIVE-TAPE-RECYCLE-PERIOD 1825
TAPE-RECYCLE-PERIOD 90
ENABLE TAPE-DRIVE-ALLOCATION
TAPE-RECOGNITION-ERRORS UNLOAD
CHANGE 9:00 WEEKDAYS
CHANGE 17:00 WEEKDAYS
CHANGE 0:00 SATURDAY
ALLOW RP06 1243
ALLOW RP20 3327
DAYLIGHT ON
ENABLE HANGUP-IF-LOGGED-IN
ENABLE HANGUP-IF-LOGGED-OUT
ENABLE SYSTEM-MESSAGE-LEVEL-0
ENABLE SYSTEM-MESSAGE-LEVEL-1
NODE DISNEY 8.164
LAT-STATE OFF
$
```

Figure 3-1:   The 6-1-CONFIG.CMD File

## 3.5  CHANGING THE OPERATOR'S PASSWORD AND USER GROUP

You may wish to change the operator's password from the widely publicized "DEC-2Ø" to a 39-alphanumeric-character phrase of your choosing. (The password can include a hyphen.) Be sure to remember the password or you will have to reinstall the system if you cannot think of the particular password that you typed.

Also, in order for the operator to run the User Environmental Test Package (UETP), he must belong to the correct user group. Steps 94 through 98 describe how to change the operator's password and user group.

➡ Step 94:  Type BUILD PS:<OPERATOR> and press the RETURN key.

Use the BUILD command to change the characteristics of the directory PS:<OPERATOR>. The system prints [Old], and then the subcommand prompt $$.

```
$BUILD PS:<OPERATOR> <RET>
[Old]
$$
```

➡ Step 95:  Type PASSWORD your-password and press the RETURN key.

To insert the operator's new password, use the subcommand PASSWORD. The system again prints the subcommand prompt.

```
$$PASSWORD your-password <RET>
$$
```

➡ Step 96:  Type USER-OF-GROUP 1ØØ and press the RETURN key.

The operator must be a member of user group 1ØØ in order to run UETP. The system again prints the subcommand prompt.

```
$$USER-OF-GROUP 1ØØ <RET>
$$
```

Error:    If you see a message similar to:  %Group already exists, you can ignore this message. The operator is already a member of the correct user group. Continue with Step 97.

➡ Step 97:  Type IPCF and press the RETURN key.

The operator must have IPCF (InterProcess Communication Facility) capabilities in order to run UETP. The system again prints the subcommand prompt.

```
$$IPCF <RET>
$$
```

➡ Step 98:  Press the RETURN key.

To return to TOPS-2Ø command level, press the RETURN key.

```
$$ <RET>
$
```

## 3.6   CREATING THE DIRECTORY PS:<REMARKS>

The system uses the directory PS:<REMARKS> to store messages sent by users to the operator. Creating this directory avoids constant interruption to the operator from users issuing PLEASE requests. With this directory the operator can read the messages at a specified time each day. Create the directory by performing Steps 99 and 100. (Refer to the TOPS-20 Operator's Guide for additional information on creating directories.)

➡ Step 99:   Type BUILD PS:<REMARKS> and press the RETURN key.

Use the BUILD command to create the directory PS:<REMARKS>.

```
$BUILD PS:<REMARKS> <RET>
[New]
$$
```

➡ Step 100:   Press the RETURN key.

Upon completion of the above step, the system prints [New] and $$. Press the RETURN key to create a directory with default characteristics.

```
$$ <RET>
$
```

## 3.7   CREATING THE LPFORM.INI FILE

If you create the LPFORM.INI file, then each time LPTSPL receives a request for the line printer, the system does the following:

1.   Prints up to five pages containing the name of the user who requested the line printer (BANNER).

2.   Prints up to five pages containing the name of the file that is being printed (HEADER).

3.   After all the information in that file is printed, it prints up to five pages containing the user's name again (TRAILER).

If this file is omitted, each time a request for the line printer is received, LPTSPL will use the system default, which is two pages each for the banner, header, and trailer.

Perform Steps 101 through 104 to create the LPFORM.INI file.

➡ Step 101:   Type CONNECT PS:<SUBSYS> and press the RETURN key.

The LPFORM.INI file must reside in the directory PS:<SUBSYS>. Use the CONNECT command to be sure you are using the correct directory.

```
$CONNECT PS:<SUBSYS> <RET>
$
```

➡ Step 102:    Type CREATE LPFORM.INI and press the RETURN key.

Use your system's text editing program to create the LPFORM.INI  file.
This  example uses the editing program EDIT.   To use EDIT, type CREATE
LPFORM.INI to create the file.   The system proceeds into edit mode and
prints INPUT: PS:<SUBSYS>LPFORM.INI and the line number 00100.

        $CREATE LPFORM.INI <RET>
        INPUT: PS:<SUBSYS>LPFORM.INI.1
        00100


➡ Step 103:    Enter the printer parameters.

| Type the printer parameters that  are  appropriate  for  your  system.
| Press  the  RETURN  key  after  each  parameter.   The  example  shows
| parameters for both  normal  and  narrow  forms.   Remember  that  the
parameters in the example are for explanatory purposes only.  You must
determine the appropriate parameters for your system.

        00100    NORMAL/BANNER:2/HEADER:2/TRAILER:2 <RET>
        00200    NARROW/BANNER:2/HEADER:2/TRAILER:2/WIDTH:72 <RET>
        00300

The parameters shown cause pages containing the user's  name  and  the
file  name  to be printed twice on both normal and narrow forms before
the actual data is printed.  Also, after all the data is printed,  the
system  prints two pages containing the user's name on both normal and
narrow forms.  The  parameter  WIDTH:72  informs  the  system  that  a
maximum  of 72 characters can be printed horizontally on narrow forms.
(Refer to the TOPS-20 Operator's Guide for a complete  description  of
all the LPFORM.INI parameters.)


➡ Step 104:    Press the ESCape key.   Type EU and press the RETURN key.

To leave edit mode and save the file without line numbers,  press  the
ESCape key.  The system prints the EDIT prompt.  Type EU and press the
RETURN key to save the file.  The system  prints  the  file  name  and
generation number, then the TOPS-20 command prompt.

        00300    $
        *EU <RET>

|       [PS:<SUBSYS>LPFORM.INI.1]
        $

|
|                                NOTE
|
|           Perform Steps 105 through Step 114 only  if  you  are
|           using  an  RP07  disk  pack for your system structure.
|           Otherwise, continue with Step 115 in Chapter 4.
|
|
|                          TCP/IP Installations
|
|           If you are installing TCP/IP-20 and are using an  RP07
|           disk pack for your system structure, perform Steps 105
|           through  114.   Otherwise,  proceed  to  Appendix   C,
|           Section C.3, Step 2.

## 3.8  BUILDING A FRONT-END FILE STRUCTURE

| Steps 105 through 114 describe how to build an RP04 or RP06  structure
for the front-end file system when you are using an RP07 disk pack for
the TOPS-20 file system.


➡ Step 105:  Type RUN CHECKD and press the RETURN key.

To run CHECKD to create a structure for your  front-end  file  system,
type RUN CHECKD.  The system prints the prompt CHECKD>.

       $RUN CHECKD <RET>
       CHECKD>


➡ Step 106:  Type CREATE FESYS and press the RETURN key.

Use the CHECKD command CREATE  to  inform  the  system  that  you  are
creating  a  structure.   The  structure  name  can  consist of 1 to 6
| alphanumeric characters.  (Refer to the TOPS-20 System Manager's Guide
| for information on naming structures.)  The example uses FESYS.  After
you enter the structure name, the system prints "Enter alias:."

|      CHECKD>CREATE FESYS <RET>
       Enter alias:


➡ Step 107:  Type FESYS and press the RETURN key.

Now inform the system of the alias name of the structure.  The example
| uses  FESYS.   The  system  then  prints  "How  many  units  in  this
| structure:."
|
|      Enter alias: FESYS <RET>
       How many units in this structure:


➡ Step 108:  Type 1 and press the RETURN key.

The front-end file system can only reside on a single structure.  Type
| 1  to  indicate  1  unit in the structure.  The system prints "DECIMAL
| Channel, Controller, and Unit numbers for logical unit 0:."

       How many units in this structure: 1 <RET>
|      DECIMAL Channel, Controller, and Unit numbers for logical unit 0:


➡ Step 109:  Type 1,-1,0 and press the RETURN key.

The front-end file system must reside on either an RP04 or  RP06  disk
drive  that is connected to both the KL10 and PDP11 front end.  If you
are not sure, type a question mark (?) and press the RETURN key.   The
system  prints  the  information  needed  to  make  the decision.  The
example uses channel 1, controller -1 (which is the default), and unit
0.   After  you  type  this  information, the system prints "Number of
pages to allocate for swapping?."

|      DECIMAL Channel, Controller, and Unit numbers for logical unit 0:
       1,-1,0 <RET>
       Number of pages to allocate for swapping?

**➡ Step 110:** **Type the number of pages to allocate for swapping and press the RETURN key.**

If you plan to use this structure as a secondary system structure, use a decimal number between 2000 and 40,000. Otherwise, type 0 and press the RETURN key. The system prints "Number of pages to allocate for the Front End File System?." The example assumes you will be using this structure as a secondary structure.

     Number of pages to allocate for swapping? 7035 <RET>
     Number of pages to allocate for the Front End File System?

**➡ Step 111:** **Type the number of pages to allocate for the front-end file system and press the RETURN key.**

To allocate the number of pages to reserve for the front-end file system, use 950 pages. The system prints "Owner name?."

     Number of pages to allocate for the Front End File System?
     950 <RET>
     Owner name?

**➡ Step 112:** **Type the owner's name and press the RETURN key.**

Enter the owner's name of the structure. The owner's name can be from 1 to 12 alphanumeric characters. The system prints "Is this a system structure for startup?." The example uses the name OPERATOR.

     Owner name? OPERATOR <RET>
     Is this a system structure for startup?

**➡ Step 113:** **Type NO and press the RETURN key.**

To inform the system that this structure will not be used at system startup, type NO. The system prints the CHECKD prompt.

     Is this a system structure for startup? NO <RET>
     CHECKD>

**➡ Step 114:** **Type EXIT and press the RETURN key.**

Type EXIT to end the CHECKD program. The system prints the TOPS-20 command prompt ($).

     CHECKD>**EXIT** <RET>
     $

<div align="center">NOTE</div>

> When performing the steps in Chapter 4, be sure you install the front-end file system on the structure you have just created.

<div align="center">TCP/IP Installations</div>

If you are installing TCP/IP-20, proceed to Appendix C, Section C.3, Step 2.

# CHAPTER 4

## CREATING THE FRONT-END FILE SYSTEM

The steps in this chapter restore the front-end file system when you reinitialize it or change the front-end hardware. They also restore the front-end software if the front-end file system on disk is destroyed.

The steps in this chapter copy the front-end software from the floppy disks to the front-end file space on the public structure. They involve the following front-end programs:

MOU   Adds a device to the list of front-end devices.

UFD   Creates a directory in the front-end file space on the public structure.

PIP   Copies files from the floppy disk to the public structure.

RED   Changes the definition of the front-end logical name SY0: from the floppy disk to the public structure.

SAV   Saves the front-end monitor.

INI   Initializes the front-end file system on the public structure.

DMO   Logically dismounts the floppy disks from the disk drives.

### TCP/IP Installations

If you are installing TCP/IP-20, you must complete Steps 1 through 23 in Appendix C before you can create the front-end file system.


### 4.1   HALTING THE TOPS-20 MONITOR

You need to halt the TOPS-20 monitor (Steps 115 through 118) before you can start the front-end monitor.


**Step 115:   Type ^ECEASE NOW and press the RETURN key.**

Before copying the front-end software from the floppy disks, stop the system to avoid damaging the file system.

```
$^ECEASE NOW <RET>
 KL2102 Will be shut down IMMEDIATELY
[Confirm] <RET>
```

4-1

```
| [Timesharing is over]
|
|              OPERATOR - WAIT FOR THE MESSAGE "Shutdown complete"
|              BEFORE ENTERING COMMANDS TO PARSER
|
|     Shutdown complete
```

➡ Step 116:  Make sure that the correct floppy disks are mounted.

Be sure that System Floppy A is mounted in the left drive (drive 0)
and that System Floppy B is mounted in the right drive (drive 1).
(Refer to Step 7 in Chapter 2 if you have trouble.)


➡ Step 117:  Type <CTRL/\>.

At the console terminal, type <CTRL/\> to return to the front-end
Command Parser.  When you are at Command Parser command level, the
system prints the prompt PAR>.

```
     <CTRL/\>
     PAR>
```


➡ Step 118:  Type SHUTDOWN and press the RETURN key.

To stop the TOPS-20 monitor, type the SHUTDOWN command.

```
     PAR>SHUTDOWN <RET>
     **HALTED**

     %DECSYSTEM-20 not running
```

Error:     If you mistype SHUTDOWN and an error message is printed,
           reissue the command.

           The system must print "%DECSYSTEM-20 not running."  If it
           does not, type <CTRL/\> and give the ABORT command.  Go back
|          to Step 117.


## 4.2  RESTARTING THE FRONT-END MONITOR

| Once the TOPS-20 monitor is shutdown, you can restart the front-end
| monitor (Steps 119 and 120).  This entire procedure is invalid if you
did not stop the TOPS-20 monitor as described in Section 4.1.


➡ Step 119:  Set the switch register to 000003 (octal).

Set the front-end switch register to 000003 (switches 1 and 0 up, the
rest down).


➡ Step 120:  Hold ENABLE and press the SWITCH REGISTER button.

Hold ENABLE and press the SWITCH REGISTER button to start the
front-end monitor from drive 0.  The system will print a few lines of
information.  After the system prints [DX1: mounted] proceed to
Section 4.3.

| RSX-20F VB15-21 12:00 13-NOV-84

    [SY0: redirected to DX0:]
    [DX0: mounted]
    [DX1: mounted]

Error:    If you left the switch register set to 000007, the system starts the KL Initialization routine. In this case, the printout looks like this:

|     RSX-20F VB15-21 12:00 13-NOV-84

        [SY0: redirected TO DX0:]
        [DX0: mounted]
        [DX1: mounted]
|         KLI -- VERSION VB15-15 RUNNING
        KLI -- ENTER DIALOG [NO,YES,EXIT,BOOT]?
        KLI>

Set the switch register to 000003 and press the ENABLE and SWITCH REGISTER buttons again.

If you set the switch register to 000003, the system may print:

11-HALT
T04

<u>or</u>

**This VOLUME DOES NOT CONTAIN A HARDWARE-BOOTABLE SYSTEM**

Set the switch register correctly and press the ENABLE and SWITCH REGISTER buttons again.


## 4.3 COPYING FILES FROM FLOPPY DISK TO RP04 OR RP06

| Use the following procedures (Steps 120 through 153) to copy the files. Remember that you are typing commands to the front end and that you must wait for a prompt before typing the answer. There is no type-ahead feature except when you want to type <CTRL/\>. You can type <CTRL/U> to erase an entire line or press the DELETE key to erase a single character per keystroke.

Many of the steps in this chapter and in Chapter 5 assume that the disk pack is mounted on drive 0. To use a dual-port drive other than drive 0, make the following changes:

1.    Where a step calls for DB0: to be typed, type the number of the actual drive used. For example, DB1:, DB2:, etc. Messages printed by the system will reflect this change.

2.    If the disk is mounted on a drive other than drive 0, pressing ENABLE and DISK in Step 160 will not work. Instead, set the front-end switch register switches 7 and 0 in the up position. Set switches 10, 9, and 8 to the binary number of the drive used. For example, for drive 1, set switch 8 up; for drive 2, set switch 9 up; for drive 3, set switches 9 and 8 up. After this has been completed, press the ENABLE and SWITCH REGISTER buttons.

➡ <u>Step 121:</u>  <u>Type <CTRL/\>.</u>

To start the front-end Command Parser, type <CTRL/\>. The system takes about 10 seconds to load the Command Parser from the floppy disks. You are at Command Parser command level when the system prints the prompt PAR%. The percent sign (%) after PAR indicates that the central processor is not running.

    [DX1: mounted]

    <CTRL/\>
    PAR%


➡ <u>Step 122:</u>  <u>STOP.</u>

The central processor (as opposed to the front-end processor) must be halted before you proceed to the next step. If the central processor is not halted, the front-end monitor will not be saved in the front-end file system in a usable state. When the central processor is stopped, the system prints a percent sign (%) following the Command Parser prompt. If it prints an angle bracket (>) give the SHUTDOWN command and type <CTRL/\> before continuing.


➡ <u>Step 123:</u>  <u>Type RUN INI and press the RETURN key.</u>

| To start the INITIALIZE program, type RUN INI. When the INITIALIZE program is ready for you to type commands (after a few seconds), it prints the prompt INI>.

|    PAR%RUN INI <RET>

    INI>


➡ <u>Step 124:</u>  <u>Type DB0: and press the RETURN key. Wait 5 seconds and</u>
                 <u>perform the next step.</u>

To initialize the front-end file system on the public structure, type DB0:. In about 5 seconds, the INI program finishes. It does not reprint the prompt. Proceed directly to the next step.

    INI>DB0: <RET>

Error:    If you type the wrong device name or get an error message,
|             start again at Step 121. If you still get an error message,
              press the front-end HALT switch and wait one minute. Go
|             back to Step 120.


➡ <u>Step 125:</u>  <u>Type <CTRL/\>.</u>

To start the front-end Command Parser, type <CTRL/\>. When the Command Parser is ready for you to type commands (about 10 seconds), it prints the prompt PAR%.

    <CTRL/\>
    PAR%


NOTE

Nothing happens until you type <CTRL/\>.

➡Step 126:   Type RUN MOU and press the RETURN key.

| To start the MOUNT program again, type RUN MOU.  When you are at MOUNT
command level, the system prints MOU>.

|        PAR%RUN MOU <RET>
         MOU>

Error:    If you make a typing error, reissue the command.


➡Step 127:   Type DBØ:  and press the RETURN key.

To allow the front end to use its reserved area on the dual-port  disk
(the  one  with the channel selector set to A/B), type DBØ:.  When the
mount operation is complete, the  system  prints  a  message  and  the
prompt MOU>.

         MOU>DBØ: <RET>
         MOU -- MOUNT COMPLETE
         MOU>

Error:    If you mistype DBØ:, the mount operation may fail.  If  this
          happens and the system reprints the prompt MOU>, reissue the
|         command.  Otherwise, go back to Step 125.


➡Step 128:   Type <CTRL/Z> and <CTRL/\>.

To terminate the MOUNT program and start the front-end Command Parser,
type  <CTRL/Z> followed by <CTRL/\>.  After about 1Ø seconds, when the
system is at Command Parser command level, it prints the prompt PAR%.

         MOU>^Z

         <CTRL/\>
         PAR%


➡Step 129:   Type RUN UFD and press the RETURN key.

| To run the UFD program, type RUN UFD.  The system  loads  the  program
from the floppy disk and starts it.  After a few seconds,  UFD is ready
for you to type commands and prints the prompt UFD>.

|        PAR%RUN UFD <RET>

         UFD>

Error:    If you make a typing error, reissue the command.


➡Step 13Ø:   Type DBØ:[5,5] and press the RETURN key.  Wait  1Ø  seconds
             and perform the next step.

To create the directory (in the front-end reserved space on the public
structure)  that  contains  the front-end file system, type DBØ:[5,5].
When the UFD program finishes, it does not reprint the  prompt.   Wait
1Ø seconds and then proceed directly to the next step.

         UFD>DBØ:[5,5] <RET>

Error:     If the system prints:

UFD -- FAILED TO CREATE DIRECTORY

you probably did not give the correct command the last  time
you ran the MOU program.  Go back to Step 122.

Error:     If the system prints:

UFD -- DIRECTORY ALREADY EXISTS

and you have run the INI  program  on  the  disk,  then  the
front-end file system has been corrupted and the entire disk
pack will have  to  be  reformatted  and  rebuilt  from  the
beginning of the installation.

➡ Step 131:   Type <CTRL/\>.

To load the front-end  Command  Parser  from  the  floppy  disk,  type
<CTRL/\>.    After   10   seconds,  the  Command  Parser  is  at  command  level
and the system prints the prompt PAR%.

    <CTRL/\>
    PAR%

NOTE

Nothing happens until you type <CTRL/\>.

➡ Step 132:   Type RUN PIP and press the RETURN key.

To load the PIP program from the floppy disk and start  it,  type  RUN
PIP.    After  10  seconds,  PIP is ready for you to type commands.  The
system prints the prompt PIP>.

    PAR%RUN PIP <RET>

    PIP>

Error:    If you make a typing error, reissue the command.

➡ Step 133:   Type DB0:*.*;*=DX0:*.*;*,DX1:*.*;* and  press  the  RETURN
              key.

To copy the newest version of all the  files  from  the  floppy  disks
(both  drive  0  and drive 1) to the front-end file system on the public
structure, type DB0:*.*;*=DX0:*.*;*,DX1:*.*;*.  (You can use  <CTRL/U>
and the DELETE key to help type this line and others in this chapter.)
You will hear clicking as the system accesses the floppy disks.  After
about  10  minutes,  the transfer is complete and the system prints the
prompt PIP>.

    PIP>DB0:*.*;*=DX0:*.*;*,DX1:*.*;* <RET>
    PIP>

Error:    If you make a typing error, reissue the command.

➡ Step 134:   Type <CTRL/Z> and <CTRL/\>.

To end PIP and start the front-end Command Parser, type <CTRL/Z> followed by <CTRL/\>. After 10 seconds, the system is ready to accept commands and prints the prompt PAR%.

    PIP>^Z

    <CTRL/\>
    PAR%

Error:   If you make a typing error, reissue the command.


➡ Step 135:   Type RUN RED and press the RETURN key.

| To load and start the REDIRECT program from floppy disk, type RUN RED. After the REDIRECT program is ready to accept commands (about five seconds), the system prints the REDIRECT prompt RED>.

|    PAR%RUN RED <RET>
    RED>

Error:   If you make a typing error, reissue the command.


➡ Step 136:   Type DB0:=SY0: and press the RETURN key. Wait 5 seconds
              and perform the next step.

To redirect the primary front-end file structure from the floppy disks to the front-end file system on the public structure, type DB0:=SY0:. After 5 seconds, the REDIRECT program is finished and does not reprint the prompt. Proceed directly to the next step.

    RED>DB0:=SY0: <RET>

Error:      If this operation fails or if you make a mistake and the
            system has printed the prompt RED>, reissue the command.  If
|           it still fails, perform Steps 119 through 121 and Steps 126
|           through 128, then continue at Step 135. (Even this may not
|           work. You may have to perform all the steps again,
|           beginning with Step 119.)


➡ Step 137:   Type <CTRL/\>.

To start the front-end Command Parser, type <CTRL/\>. After one second, the system loads and starts the Command Parser and prints the prompt PAR%.

    <CTRL/\>
    PAR%


➡ Step 138:   Type RUN SAV and press the RETURN key.

| To start the SAVE program, type RUN SAV. After one second, SAVE is ready to accept commands and the system prints the prompt SAV>.

|    PAR%RUN SAV <RET>
    SAV>

Error:   If you make a typing error, reissue the command.

➡Step 139:  Set the switch register to zero.

Before proceeding, set the switch register to zero (all switches down).

➡Step 140:  Type SY0:/WB and press the RETURN key.

To save the system bootstrap and the front-end monitor in the front-end file system on the public structure, type SY0:/WB (WB stands for Write Bootstrap).  After the bootstrap and the monitor are saved, the system prints a message and the front end restarts itself at the save entry point.

        SAV>SY0:/WB <RET>
        [DB0: dismounted]
        [DX0: dismounted]
        [DX1: dismounted]

|       RSX-20F VB15-21 12:19 13-NOV-84

        [SY0: redirected to DB0:]
        [DB0: mounted]

The last two messages inform you that the front end is using the files on the TOPS-20 file system instead of on the floppy disks.

Error:    If you make a typing error, reissue the command.

➡Step 141:  Store the floppy disks A and B.

Remove the floppy disks, insert them in their covers, and store them in a safe place.

                            NOTE

        If you have some spare floppies  available,  it  is  a
        good idea to copy System Floppies A and B to the spare
        floppies for backup purposes.  Refer  to  the  TOPS-20
        System Manager's Guide for this procedure.

➡Step 142:  Mount System Floppy C on drive 0.

Mount System Floppy C in the left drive (drive 0).  (Refer to  Step  7 in Chapter 2 if you have trouble.)

➡Step 143:  Type <CTRL/\>.

To start the front-end Command Parser again, type <CTRL/\>.  After one second,  the system loads and starts the Command Parser and prints the prompt PAR%.

        <CTRL/\>
        PAR%

➡Step 144:  Type RUN MOU and press the RETURN key.

|  To start the MOUNT program, type RUN MOU.  When the system is at MOUNT command level, the system prints the prompt MOU>.

| PAR&RUN **MOU** <RET>
MOU>

Error:    If you make a typing error, reissue the command.


➡ Step 145:  Type DX0:  and press the RETURN key.

| To allow the front end to use its reserved area, type DX0:.  The MOUNT
program mounts floppy drive 0, then prints the message MOUNT COMPLETE.

     MOU>DX0: <RET>
     MOU -- MOUNT COMPLETE
     MOU>


➡ Step 146:  Type <CTRL/Z> and <CTRL/\>.

To terminate the MOUNT program and start the front-end Command Parser,
type  <CTRL/Z> followed by <CTRL/\>.  After about one second, when the
system is at Command Parser command level, it prints the prompt PAR%.

     MOU>^Z

     <CTRL/\>
     PAR%


➡ Step 147:  Type RUN PIP and press the RETURN key.

| To run the PIP program, type RUN PIP.  When PIP is at  command  level,
it prints the prompt PIP>.

|     PAR&RUN PIP <RET>

     PIP>

Error:    If you make a typing error, retype the command.


➡ Step 148:  Type DB0:*.*;*=DX0:*.*;* and press the RETURN key.

Copy  the  contents  of  System  Floppy  C  to  the  disk  by   typing
| DB0:*.*;*=DX0:*.*;*.   This copies the files on System Floppy C to the
| disk.  When the files are copied, PIP prints the prompt PIP>.
|
|     PIP>DB0:*.*;*=DX0:*.*;* <RET>
     PIP>


➡ Step 149: Type DB0:/LI and press the RETURN key.

To get a list of the files on the front-end file system, type DB0:/LI.
The system prints the list of the files copied from floppies A, B, and
C.  Check it against the directory listing  shown  in  the  TOPS20.BWR
file to be sure that you have all the files shown there.

| The directory listing shown in Figure 4-1 is only a  sample.   Do  not
worry  about  the order of the files, generation numbers, or dates and
times when comparing the files. The  file  sizes  (indicated  in  the
second  column  in  256-word  blocks)  should  be  the same. When the
listing is finished, the system prints the prompt PIP>.

```
PIP>DB0:/LI <RET>


DIRECTORY DB0:[5,5]
13-NOV-84 12:17

   F11ACP.TSK;1521      77.      C   13-NOV-84 12:04
   TKTN.TSK;1521         6.      C   13-NOV-84 12:04
   MOU.TSK;1521          5.      C   13-NOV-84 12:04
   KLX.MCB;400          55.          13-NOV-84 12:05
   HALT.CMD;1            5.          13-NOV-84 12:05
   BOOT.EXB;11306       46.          13-NOV-84 12:05
   BF16N1.All;1          1.          13-NOV-84 12:05
   BF64N1.All;1          1.          13-NOV-84 12:05
   SB0.CMD;1             2.          13-NOV-84 12:05
   SB1.CMD;1             2.          13-NOV-84 12:06
   CLOCK.CMD;1           1.          13-NOV-84 12:06
   EBUS.CMD;1            1.          13-NOV-84 12:06
   DEX.CMD;1             2.          13-NOV-84 12:06
   KPALV.CMD;1           1.          13-NOV-84 12:06
   TIMEO.CMD;1           1.          13-NOV-84 12:06
   FMPAR.CMD;1           1.          13-NOV-84 12:06
   CRAM.CMD;1            1.          13-NOV-84 12:07
   DRAM.CMD;1            1.          13-NOV-84 12:07
   MTBOOT.EXB;11306     40.          13-NOV-84 12:07
   LOOP.CMD;1            1.          13-NOV-84 12:07
   PARSER.TSK;705       71.      C   13-NOV-84 12:07
   KLDISC.TSK;1521       5.      C   13-NOV-84 12:08
   KLRING.TSK;1521       6.      C   13-NOV-84 12:08
   LOGXFR.TSK;1521      10.      C   13-NOV-84 12:08
   MIDNIT.TXK;1521       4.      C   13-NOV-84 12:08
   SETSPD.TSK;1521       5.      C   13-NOV-84 12:08
   KLI.TSK;1515         73.      C   13-NOV-84 12:08
   T20ACP.TSK;1521       8.      C   13-NOV-84 12:09
   BOO.TSK;1521         19.      C   13-NOV-84 12:09
   COP.TSK;1521          8.      C   13-NOV-84 12:09
   DMO.TSK;1521          5.      C   13-NOV-84 12:09
   INI.TSK;1521         23.      C   13-NOV-84 12:09
   PIP.TSK;1521         56.      C   13-NOV-84 12:09
   RED.TSK;1521          6.      C   13-NOV-84 12:10
   SAV.TSK;1521         23.      C   13-NOV-84 12:10
   UFD.TSK;1521          9.      C   13-NOV-84 12:10
   ZAP.TSK;1521         38.      C   13-NOV-84 12:10
   RSX20F.SYS;1521      59.      C   13-NOV-84 12:10
   RSX20F.MAP;1521     154.          13-NOV-84 12:16
   RP2DBT.EXB;11306     69.          13-NOV-84 12:16
   RP2MBT.EXB;11306     60.          13-NOV-84 12:16

       TOTAL OF 961. BLOCKS IN 41. FILES



   PIP>
```

Figure 4-1:  Directory Listing of Front-End Files

➡ Step 150:  Type <CTRL/Z> and <CTRL/\>.

To exit from the PIP program, type <CTRL/Z>.  To restart the front-end command  parser,  type <CTRL/\>.  When at command level, the front-end command parser prints the prompt PAR%.

        PIP>^Z

        <CTRL/\>
        PAR%


➡ Step 151: Type RUN DMO and press the RETURN key.

| To start the DMO program, type RUN DMO.  When at  command  level,  the DMO program prints the prompt DMO>.

|       PAR%RUN DMO <RET>
        DMO>


➡ Step 152:  Type DX0:  and press the RETURN key.

To dismount the floppy drive, type DX0:.  After a  few  seconds,  when the drive is dismounted, DMO prints a message and the prompt DMO>.

        DMO>DX0: <RET>
        DMO -- DISMOUNT COMPLETE
        DMO>


➡ Step 153:  Type <CTRL/Z> and <CTRL/\>.

To exit from the DMO program,  type  <CTRL/Z>  followed  by  <CTRL/\>. When  you return to command level, the front-end command parser prints the prompt PAR%.

        DMO>^Z

        <CTRL/\>
        PAR%


➡ Step 154:  Store floppy C.

| Remove System Floppy C from the drive, insert it into  its  protective
| cover, and store it with floppies A and B.

                              NOTE

        If you have a spare floppy available,  it  is  a  good
        idea  to  copy System Floppy C to the spare floppy for
        backup  purposes.   Refer  to  the  TOPS-20  System
        Manager's Guide for this procedure.


|                         RP20 Disks
|
|       If you have an RP20 disk subsystem, perform the  steps
|       in  Section 4.4.  Otherwise, continue the installation
|       procedures at Step 160.

## 4.4 RENAMING THE DX20 MICROCODE FILES

You have already copied the RP20/DX20 microcode from System Floppy C to the front-end (Step 148). Now you must rename the following files in order for them to be used when you restart the system.

- RP2DBT.EXB is a new front-end BOOT file with the new DX20 microcode loaded.

- RP2MBT.EXB is a new front-end MTBOOT file with the new DX20 microcode loaded.

BOOT and MTBOOT are loaded with the RP20/DX20 microcode and will reload DX20s as necessary when the monitor is loaded.

RP20 Disk Controller

It is necessary that the 8000-2 controller for the RP20 disk subsystem be in 370 mode. Refer to the 8000 Controller Maintenance Reference Manual, Volume 2, page U210, for information on switch settings.

**Step 155: Be sure that the central processor is stopped.**

Check your output to be sure that the last time the system printed the prompt PAR (in Step 153) it was followed by a percent sign (%) to indicate that the central processor has stopped. If PAR is followed by an angle bracket (>), type SHUTDOWN and press the RETURN key.

**Step 156: Type RUN PIP and press the RETURN key.**

To run the PIP program, type RUN PIP. When PIP is at command level, it prints the prompt PIP>.

    PAR%RUN PIP <RET>

    PIP>

Error:    If you make a typing error, retype the command.

**Step 157: Type DB0:[5,5]BOOT.EXB=DB0:[5,5]RP2DBT.EXB and press the RETURN key.**

Rename the boot program for disks by typing DB0:[5,5]BOOT.EXB=DB0:[5,5]RP2DBT.EXB. When PIP completes the procedure, it prints PIP>.

    PIP>DB0:[5,5]BOOT.EXB=DB0:[5,5]RP2DBT.EXB <RET>
    PIP>

**Step 158: Type DB0:[5,5]MTBOOT.EXB=DB0:[5,5]RP2MBT.EXB and press the RETURN key.**

Rename the boot program for magnetic tape drives by typing DB0:[5,5]MTBOOT.EXB=DB0:[5,5]RP2MBT.EXB. When PIP completes the procedure, it prints PIP>.

    PIP>DB0:[5,5]MTBOOT.EXB=DB0:[5,5]RP2MBT.EXB <RET>
    PIP>

➡ <u>Step</u> <u>159</u>:   <u>Type</u> <u><CTRL/Z></u> <u>and</u> <u><CTRL/\></u>.

To exit from the PIP program, type <CTRL/Z>.  To restart the front-end
command  parser,  type <CTRL/\>.  When at command level, the front-end
command parser prints the prompt PAR%.

       PIP>^Z

       <CTRL/\>
       PAR%

# CHAPTER 5

## STARTING THE SYSTEM

At this point you have:

1. Initialized the TOPS-20 file system.

2. Loaded the TOPS-20 monitor and related programs into the directories PS:<SYSTEM> and PS:<SUBSYS>.

3. Loaded the files for the TOPS-20 User Environmental Test Package into the directory PS:<UETP.LIB>.

4. Created the system initialization files.

5. Loaded the front-end software into the TOPS-20 file system.

| The only thing left to be done is to restart the system. Once this is
| done, the TOPS-20 file system is intact and the standard TOPS-20
bundled software is completely installed on your system. This means
you can stop the system and reboot it from the file system on disk.

Whenever you have to restart the system, be sure that the central
processor is stopped; otherwise you can damage the file system you
just created.

| Steps 160 through 165 describe how to restart the system.


➡ Step 160:  Be sure that the central processor is stopped.

Check your output to be sure that the last time the system printed the
| prompt PAR (in Step 153 or Step 159) it was followed by a percent sign
(%) to indicate that the central processor has stopped. If the prompt
is followed by an angle bracket (>), type SHUTDOWN and press the
RETURN key.


➡ Step 161:  Hold ENABLE and press the DISK button.

To restart the system, hold ENABLE and press the DISK button. The
system restarts after a few seconds and obtains all the software from
the TOPS-20 file system.

If the TOPS-20 file system is on a drive other than drive 0, holding
the ENABLE button and pressing the DISK button does not work. You
must set the switch register to the appropriate disk drive. For
example, if the TOPS-20 file system is on drive 1, set switches 8, 7,
and 0 up; for drive 2, set switches 9, 7 and 0 up. (Refer to the
TOPS-20 Operator's Guide for more information on setting the switch
register.)

Once you have set the switches to the appropriate disk drive, hold
ENABLE and press the SWITCH REGISTER button rather than the DISK
button. When you follow this procedure, the system prints the
question, KLI -- ENTER DIALOG [NO,YES,EXIT,BOOT]?  and waits for a
reply.  Reply by pressing the RETURN key.

| RSX-20F VB15-21 12:19 13-NOV-84

  [SY0: redirected to DB0:]
  [DB0: mounted]
| KLI -- VERSION VB15-15 RUNNING
  KLI -- KL10 S/N: 2102., MODEL B, 60 HERTZ
  KLI -- KL10 HARDWARE ENVIRONMENT:
          MOS MASTER OSCILLATOR
          EXTENDED ADDRESSING
          INTERNAL CHANNELS
          CACHE

                              NOTE

          If you have a DECSYSTEM-20 Model 2065, you will see
          these additional messages:

                  KLI -- % NO FILE
                  KLI -- PAGE TABLE SELECTED: BOTH

| KLI -- MICROCODE VERSION 2.0[407] LOADED
| KLI -- % NO FILE - ALL CACHE BEING CONFIGURED
  KLI -- ALL CACHES ENABLED
| KLI -- % NO FILE - ALL MEMORY BEING CONFIGURED

  LOGICAL MEMORY CONFIGURATION
    ADDRESS   SIZE   INT   TYPE   CONTROLLER
    00000000  768K    4    MF20      10

| KLI -- % NO FILE - LOADING BOOTSTRAP
  KLI -- CONFIGURATION FILE WRITTEN
  KLI -- BOOTSTRAP LOADED AND STARTED

| BOOT V11.0(311)
| [BOOT: LOADING] [OK]


  [PS MOUNTED]
|
| [IPALOD: LOADING CI20 MICROCODE 1.00(705)] [OK]

  System restarting, wait...
  ENTER CURRENT DATE AND TIME:
|
|                     DX20 Microcode
|
|     You will receive a message concerning the DX20
|     microcode only if you are installing the TOPS-20
|     software on a DECSYSTEM-20 with an RP20 tape or disk
|     controller.
|
|
|
|                          CI20
|
|     You will receive the message concerning the CI20
|     microcode only if you are installing TOPS-20 software
|     on a DECSYSTEM-20 with CI20.

The line "System restarting, wait..." is printed on all the terminals currently connected to the system to inform users that the system will soon be ready to use.

Error:    If the system prints:

          *** THIS VOLUME DOES NOT CONTAIN A HARDWARE BOOTABLE SYSTEM ***

          the disk pack on the dual-port drive does not contain the front-end software. Perhaps the wrong disk pack has been mounted. But if everything appears to be in order, try the steps in Chapters 2 through 4 again. If the error continues, contact DIGITAL Software Support.

          If the system does nothing when you press the switches, you may have pressed ENABLE and SWITCH REGISTER by mistake. Try pressing ENABLE and DISK.

          If the system prints JSYS error messages between the lines "[PS MOUNTED]" and "System restarting, wait...," you probably mistyped some information in the configuration command file. Use an editor program, such as EDIT, to check the file and correct any errors.

➡ Step 162:   Type the date and time and press the RETURN key.

After the prompt, type the date and time in the form dd-mmm-yy hhmm, with the time in 24-hour format. Then press the RETURN key. For example:

          ENTER CURRENT DATE AND TIME: 12-JUN-85 1112 <RET>

          YOU HAVE ENTERED WEDNESDAY, 12-JUN-85 11:12AM,
           IS THIS CORRECT (Y,N)

➡ Step 163:   Type Y or N and press the RETURN key.

After the system prints the date and time, check to be sure that it is correct. If it is, type Y and press the RETURN key. If the date or time is incorrect, type N, press the RETURN key, and go back to Step 162.

          YOU HAVE ENTERED WEDNESDAY, 12-JUN-85 11:12AM,
           IS THIS CORRECT (Y,N) Y <RET>
          WHY RELOAD?

➡ Step 164:   Type SC and press the RETURN key.

If you plan to install optional software, type SC and press the RETURN key. When you bring up the system for any other reason, type one of the abbreviations listed in Table 5-1.

          WHY RELOAD? SC <RET>

          <SYSTEM>ACCOUNTS-TABLE.BIN NOT FOUND - ACCOUNT VALIDATION IS
          DISABLED

          RUN CHECKD?

Table 5-1:  System Reload Abbreviations

| Abbreviation | Meaning |
|---|---|
| OP | OPR |
| PA | Parity |
| PO | Power Failure |
| ST | Static |
| HAR | Hardware |
| HA | Halt |
| HU | Hung |
| PM | Preventive Maintenance |
| CM | Corrective Maintenance |
| SA | Stand-alone |
| NE | New Monitor |
| SC | Scheduled |
| OT | Other |

**➡ Step 165:  Type N and press the RETURN key.**

The CHECKD program examines the entire disk file system, reports any errors, and tries to correct them.  You do not have to run this program unless the system crashes unexpectedly or if, for some other reason, you suspect that there may be disk errors.  If you halt the system by giving a ^ECEASE command or by using some other controlled means, you do not have to run CHECKD before restarting.

● If you do run CHECKD, be prepared for a long wait until the system prints something on your console terminal.  For each inconsistency, CHECKD prints a message and the directory in which the error occurred.  (Refer to the TOPS-20 Operator's Guide for a list of CHECKD error messages.)

The system runs DDMP and SYSJOB after you type N.  Figure 5-1 is an example of the CTY output generated at system startup.

                              CI20

        If you have CI20 and is on, you may receive a series
        of messages about its activities - loading,
        starting, and opening circuits. These messages are
        for your information only.


                            Ethernet

        You will receive the message concerning the Ethernet
        microcode only if you are installing TOPS-20
        software on a DECSYSTEM-20 with an Ethernet.

```
RUN CHECKD? N <RET>

RUNNING DDMP


SYSJOB 6A(20) STARTED AT 12-JUN-85 1112
[KNILDR: LOADING MICROCODE VERSION 1(162) INTO ETHERNET CHANNEL
0]


*****
12-JUN-85 11:12:39 - TGHA 4(0) IN OPERATION.
*****
RUN SYS:INFO
RUN SYS:MAPPER
RUN SYS:ORION
RUN SYS:QUASAR
RUN SYS:MOUNTR
RUN SYS:MAILER
RUN SYS:LPTSPL
RUN SYS:LPTSPL
RUN SYS:CDRIVE
RUN SYS:SPRINT
JOB 0 /LOG OPERATOR XX OPERATOR
ENA
^ESET LOGIN PSEUDO
^ESET LOGIN CONSOLE
^ESET OPERATOR
PTYCON
GET SYSTEM:6-1-PTYCON.ATO
/
JOB 1 /LOG OPERATOR XX OPERATOR
ENA
GET SYS:BATCON
/
SJ  0: @LOG OPERATOR OPERATOR
SJ  1: @LOG OPERATOR OPERATOR
SJ  0:   Job 1 on TTY206 dd-mmm-yy hh:mm:ss, Last Login never
SJ  1:   Job 1 on TTY206 dd-mmm-yy hh:mm:ss, Last Login never
SJ  0: @ENA
SJ  1: @ENA
SJ  1: $GET SYS:BATCON
SJ  0: $^ESET LOGIN PSEUDO
SJ  0: $^ESET LOGIN CONSOLE
SJ  0: $^ESET OPERATOR
SJ  0: $PTYCON
SJ  0: PTYCON> GET SYSTEM:6-1-PTYCON.ATO
SJ  0: PTYCON> SILENCE

[From OPERATOR on line 210 to all:   SYSTEM IN OPERATION]
SJ  0: PTYCON> W ALL
SJ  0: OPR(0)      3            OPERATOR   OPR        TI         0:0:1
SJ  0: PTYCON> CONN OPR
SJ  0: [CONNECTED TO SUBJOB OPR(0)]
```

Figure 5-1:  Sample Console Terminal Output at System Startup

# CHAPTER 6

## INSTALLING THE TOPS-20 DISTRIBUTION TAPE

The steps in this section describe how to install the TOPS-20 Distribution tape and/or any TOPS-20 Tools tapes.

To install any optional software products, follow the steps specified in the installation guide that accompanies each optional software product.

If you are installing DECnet-20, follow the steps in the DECnet-20 Network Generation and Procedures manual.

The TOPS-20 Distribution tape contains four savesets. These savesets are:

● Documentation regarding specific programs.

● Sources that allow you to rebuild certain programs, if required.

● Language sources that allow you to rebuild certain language modules, such as MACRO, LINK.

● GALAXY sources that allow you to rebuild a GALAXY system, if required.

The procedures in this chapter are OPTIONAL. You may find it helpful to restore the documentation files and the source files. The remaining savesets, language and GALAXY sources, are not required to run the product.

To restore the documentation, you need at least 1100 free pages in the directory <OPERATOR>. To restore the sources, you need at least 3800 free pages in the directory <SUBSYS>. If you decide to restore the language and/or GALAXY sources, restore them to directories of your own choosing. The directory for the language sources needs at least 1300 free pages of disk space. The directory for the GALAXY sources needs at least 3000 free pages of disk space.

Perform Steps 166 through 187 at the console terminal (CTY) to install the Distribution tape and/or any Tools tapes.

Step 166: Type <CTRL/C>.

Type <CTRL/C> to start a job.

```
<CTRL/C>
  Installation-test System, TOPS-20 Monitor 6.1(6763)
@
```

➡Step 167:  Log in and enable WHEEL or OPERATOR privileges.

| You must be enabled and have privileges to perform these procedures.
| Follow the steps in the example to log in and enable your
| capabilities.
|
|        Installation-test System, TOPS-20 Monitor 6.1(6625)
|        @LOGIN OPERATOR your-password <RET>
|        Job 4 on TTY5 dd-mmm-yy hh:mm:ss, Last Login dd-mmm-yy hh:mm:ss
|        @ENABLE <RET>
|        $


➡Step 168:  Type OPR and press the RETURN key.

| Type OPR to run the OPR program.
|
|        $OPR <RET>
|        OPR>
●

➡Step 169:  Type SHOW STATUS TAPE-DRIVE /ALL and press the RETURN key.

    To find a tape drive that you can use for mounting the software tape,
    type the OPR command SHOW STATUS TAPE-DRIVE /ALL.  The system responds
    with a list of tape drives and their status.

        OPR>SHOW STATUS TAPE-DRIVE /ALL <RET>
        OPR>
        15:58:35              --Tape Drive Status--

        Drive   State        Volid   Req#   Job#   User
        -----   -----        ------   ----   ----   ----
        MTA0:   Unloaded
                AVR: Yes
        MTA1:   In Use       DEK     31     45     LARRUP
                AVR: Yes, Write: Yes, Unlabeled
        MTA2:   Loaded
                AVR: Yes, Write: Yes, Unlabeled
        MTA3:   Unloaded
                AVR: Yes
        MTA4:   Unloaded
                AVR: No
        MTA5:   Unloaded
                AVR: Yes
        OPR>


➡Step 170:  Type SET TAPE-DRIVE MTAn:  UNAVAILABLE and press the RETURN
            key.

    To mount the software tape, you should first make a free drive
    unavailable to timesharing users.  The OPR command SET TAPE-DRIVE
    MTAn: UNAVAILABLE does this.  The example uses drive number 0, but
    you can specify any drive that is not in use.

        OPR>SET TAPE-DRIVE MTA0: UNAVAILABLE <RET>
        Enter text and terminate with ^Z


➡Step 171: Type INSTALLING OPTIONAL SOFTWARE and type <CTRL/Z>.

| Type the text INSTALLING OPTIONAL SOFTWARE and then type <CTRL/Z>.

```
| Enter text and terminate with ^Z
| INSTALLING OPTIONAL SOFTWARE ^Z
| OPR>
| 15:59:07          -- Tape Drive Set Unavailable --
|                   MTA0: set unavailable for assignment by MOUNTR
| SJ  0:
| SJ  0: 15:59:07          -- Tape Drive Set Unavailable --
| SJ  0:                   MTA0: set unavailable for assignment by MOUNTR
| OPR>
```

**Step 172:** Type EXIT and press the RETURN key.

Type EXIT to leave the OPR program.

```
OPR>EXIT <RET>
$
```

**Step 173:** Type ASSIGN MTAn: and press the RETURN key.

Type ASSIGN MTAn: to assign a magnetic tape drive to your job. The example uses drive number 0, but you can use any drive with the status UNLOADED. The system prints the system prompt when the drive is assigned.

```
$ASSIGN MTA0: <RET>
$
```

Error:    If the device is assigned to another job, the system prints the message:

          ?ALREADY ASSIGNED TO JOB n

          Use the command INFORMATION AVAILABLE DEVICES to find an available tape drive.  Reissue the ASSIGN command.

**Step 174:** Type DUMPER and press the RETURN key.

Type DUMPER to start the DUMPER program. The system prints the DUMPER prompt DUMPER>.

```
$DUMPER <RET>
DUMPER>
```

### DUMPER ERRORS

If you get errors when using DUMPER, refer to the description of DUMPER in the TOPS-20 User Utilities Guide.

**Step 175:** Type TAPE MTAn: and press the RETURN key.

Type TAPE MTAn: to tell DUMPER which tape drive to use. The example uses MTA0:, but if you assigned another drive in Step 173, use that drive number instead. The system prints the DUMPER prompt DUMPER>.

```
DUMPER>TAPE MTA0: <RET>
DUMPER>
```

➡ Step 176:   Mount the software tape.

Mount the Distribution tape (or Tools tape)  on  the  drive  that  is
assigned  to  your  job.   Remember  to press the ON LINE button after
| mounting the tape on a TU45 tape drive.  (See Step 9 in Chapter 2  for
| information on mounting tapes.)


➡ Step 177:   Type REWIND and press the RETURN key.

To start the tape at the beginning, type REWIND.  The system moves the
tape to the beginning and prints the DUMPER prompt DUMPER>.

        DUMPER>REWIND <RET>
        DUMPER>
|
|
|                               NOTE
|
|        If you are restoring Tools  tapes,  you  may  need  to
|        build  additional  directories  to hold the files.  In
|        this case, proceed to Step 180/181 for an  example  of
|        building  directories  and  then  restoring files from
|        tape.  Refer to the TOPS-20 System Manager's Guide for
|        additional information on building directories.


➡ Step 178:   Type RESTORE PS:<*>*.*.* PS:<OPERATOR>*.*.* and  press  the
              RETURN key.

To restore the documents on the Distribution  tape  to  the  directory
PS:<OPERATOR>,  type the RESTORE command.  The system prints the total
number of files and pages restored, followed  by  the  DUMPER  prompt.
(If  you  want  a list of the files, give the FILES command before the
RESTORE command.)  You  can  restore  the  files  to  any  directory.
PS:<OPERATOR> is not required.

|        DUMPER>RESTORE PS:<*>*.*.* PS:<OPERATOR>*.*.* <RET>
|        DUMPER TAPE # 1, ""DOCUMENTATION FILES FOR TOPS-20 V6.1""
|         Loading files into PS:<OPERATOR>
|         End of Saveset.
|
|
|         Total files restored:     n
|         Total pages restored:     n
|        DUMPER>

Error:   If  you  do  not  see  the  message  "Loading  files  into
         PS:<OPERATOR>,"  no  files  are  being  restored  from tape.
         Rewind the tape and try again.  Be sure you have the correct
         tape  mounted  and  the  tape drive is on line.  If problems
         persist, contact your DIGITAL Field Service Representative.

You can list any of the files on the line printer by  typing  <CTRL/C>
and  giving  the  PRINT command.  The files with file types .MEM, .BWR,
.BD, .SD, .DOC, .TCO, and .PCO are the most useful to print.

| Two files that you may want to print are BUG.MEM and UUOJSYS.MEM.  The
| BUG.MEM  file  contains  documentation  on  BUGCHK,  BUGINF, and BUGHLT
| messages.  The file UUOJSYS.MEM contains documentation on UUO to  JSYS
| comparisons.

Then return to DUMPER by giving the CONTINUE command and pressing  the
RETURN key twice.  In the example, the file SOURCE.DIR is printed.

```
DUMPER>^C
$PRINT SOURCE.DIR <RET>
$CONTINUE <RET>
<RET>
DUMPER>
```

➡ Step 179:   Type RESTORE PS:<*>*.*.*  PS:<SUBSYS>*.*.* and press the
              RETURN key.

To restore the source files for TOPS-20 to PS:<SUBSYS>, type the
RESTORE command. The system prints the total number of files and
pages restored, followed by the DUMPER prompt.

```
DUMPER>RESTORE PS:<*>*.*.* PS:<SUBSYS>*.*.* <RET>
DUMPER TAPE # 1, ""SOURCE FILES FOR TOPS-20 V6.1""
 Loading files into PS:<SUBSYS>
 End of Saveset.


 Total files restored:     n
 Total pages restored:     n
DUMPER>
```

➡ Step 180:   Restore the language sources (optional).

➡ Step 181:   Restore the GALAXY sources (optional).

If you do not want to restore the sources for either the language or
GALAXY sources, continue at Step 182.

If you want to restore the source files for either the language or
GALAXY sources, give the RESTORE command with the name of the
directory where you want the sources stored. Normally, the
directories in the definition of the system logical name SYS: do not
contain source files, so you should use the BUILD command to create
appropriate directories for the source files.

Use the following procedure to build two new directories and to
restore the language sources, and then the GALAXY sources. You can
use directory names of your own choosing in place of
<LANGUAGE-SOURCES> and <GALAXY-SOURCES>.

```
DUMPER>EXIT <RET>
$BUILD PS:<LANGUAGE-SOURCES> <RET>
[New]
$$WORKING 1300 <RET>
$$PERMANENT 1300 <RET>
$$ <RET>
$BUILD PS:<GALAXY-SOURCES> <RET>
[New]
$$WORKING 3000 <RET>
$$PERMANENT 3000 <RET>
$$ <RET>
$DUMPER <RET>
DUMPER>TAPE MTA0: <RET>
DUMPER>RESTORE PS:<*>*.*.* PS:<LANGUAGE-SOURCES>*.*.* <RET>
Saveset ""LANGUAGE SOURCES FOR TOPS-20 V6.1""
 Loading files into PS:<LANGUAGE-SOURCES>
 End of Saveset.
```

```
|        Total files restored:      n
|        Total pages restored:      n
|     DUMPER>RESTORE PS:<*>*.*.* PS:<GALAXY-SOURCES>*.*.* <RET>
|     Saveset ""GALAXY SOURCES FOR TOPS-20 V6.1""
|      Loading files into PS:<GALAXY-SOURCES>
|      End of Tape.
|
|
|      Total files restored:      n
|      Total pages restored:      n
|     DUMPER>
```

➡ Step 182:  Type EXIT and press the RETURN key.

   Type EXIT to leave DUMPER and return to TOPS-20 command level.

      DUMPER>EXIT <RET>
      $

➡ Step 183:  Type UNLOAD MTAn:  and press the RETURN key.

| Type UNLOAD MTAn:  to rewind and unload the tape from the tape drive.
|
|     $UNLOAD MTA0: <RET>
|     $

➡ Step 184:  Dismount the software tape and store it.

   Remove the Distribution tape (or the Tools tape) from  the  drive  and
   store it in a safe place.

➡ Step 185:  Return to Step  176  to  restore  files  from  other  tapes
             (optional).

| Go back to Step 176 if you want to restore other tapes;  for  example,
| Tools tapes.  Otherwise, continue with Step 186.

➡ Step 186:  Type DEASSIGN MTAn:  and press the RETURN key.

   Type DEASSIGN MTAn:  to release the magnetic tape  for  use  by  other
   users.  The system prints the TOPS-20 ENABLEd prompt.

      $DEASSIGN MTA0: <RET>
      $

➡ Step 187:  Proceed to Step 188 in Chapter 7 to run UETP.

# CHAPTER 7

## RUNNING THE TOPS-20 UETP PACKAGE

This chapter describes how to run the User Environment Test Package (UETP). This program performs a cursory check of the system.

UETP starts a number of tests that can run either once or repeatedly. The source files are kept in the directory <UETP.LIB>, while the temporary data files and results of the tests are stored in the directory <UETP.RUN>. For more information on UETP, refer to the User Environment Test Package Reference Manual.

NOTE

If you performed the steps in Chapter 6 of this manual, you can skip Steps 188 and 189 and start at Step 190. You should perform all the steps in this chapter on the operator's console terminal (CTY). Otherwise, you must return to the CTY after completing the steps in this chapter to resume control of the system.

## 7.1 RUNNING THE STANDARD TESTS

Perform Steps 188 through 198 to run the standard UETP tests.

➡ Step 188:  Type <CTRL/C>.

Type <CTRL/C> to start a job.

```
<CTRL/C>
     Installation-test System, TOPS-20 Monitor 6.1(6763)
@
```

➡ Step 189:  Log in and enable WHEEL or OPERATOR privileges.

At the CTY, log in to the system and enable your capabilities. Follow the example to perform these procedures.

```
     Installation-test System, TOPS-20 Monitor 6.1(6763)
@LOGIN OPERATOR your-password <RET>
     Job n on TTYn dd-mmm-yy hh:mm:ss, Last Login dd-mmm-yy hh:mm:ss
@ENABLE <RET>
$
```

➡️Step 190:   Type TAKE PS:<UETP.LIB>SET-UP.CMD and press the RETURN key.

To set up various subdirectories, type  TAKE  PS:<UETP.LIB>SET-UP.CMD.
This  command  file  contains all  the commands necessary to create the
subdirectories.

```
$TAKE PS:<UETP.LIB>SET-UP.CMD <RET>
[New]
[New]
   .
   .
   .
End of <UETP.LIB>SET-UP.CMD.1
$
```

➡️Step 191:   Type CONNECT PS:<UETP.RUN> and press the RETURN key.

Type CONNECT PS:<UETP.RUN> to connect to the directory  that  has  the
standard tests.

```
$CONNECT PS:<UETP.RUN> <RET>
$
```

➡️Step 192:   Type RUN UETP.EXE and press the RETURN key.

To start the UETP program, type RUN UETP.EXE.  The system  prints  the
prompt UETP>.

```
$RUN UETP.EXE <RET>
[dd-mmm-yy hh:mm:ss          User Environment Test Package ]

UETP>
```

➡️Step 193:   Type TAKE VERIFY.CMD and press the RETURN key.

| Type TAKE VERIFY.CMD to load the standard  verification  tests.   This
command  causes  the  standard  tests  to be loaded and the first test
(VERIFY) to begin.  The system prints  several  messages  followed  by
status  information.   In the example, the field hh:mm:ss indicates the
time the message was generated.

```
UETP>TAKE VERIFY.CMD <RET>

UETP>ENABLE VERIFY/CYCLE:1        ! Verify that the correct software
[hh:mm:ss   ENABLE COMPLETED]

UETP>BEGIN                        ! is installed
[hh:mm:ss   BEGIN COMPLETED]

UETP>DEFAULT/CYCLE:00:15
[hh:mm:ss   DEFAULT COMPLETED]

UETP>ENABLE RANCBL
[hh:mm:ss   ENABLE COMPLETED]

UETP>ENABLE RANFOR
[hh:mm:ss   ENABLE COMPLETED]

UETP>ENABLE MTA0
[hh:mm:ss   ENABLE COMPLETED]
```

```
UETP>STATUS

[dd-mmm-yy hh:mm:ss]
```

| Test name | Depth | Status | Cycle | Times run | Error count | Error limit | Start time |
|---------|-------|---------|-------|-------|-------|-------|-------|
| VERIFY | VER | Running | 1 | Ø | Ø | Ø | dd-mmm-yy hh:mm:ss |
| RANCBL | VER | Enabled | Ø:15 | Ø | Ø | Ø | |
| RANFOR | VER | Enabled | Ø:15 | Ø | Ø | Ø | |
| MTAØ | VER | Enabled | Ø:15 | Ø | Ø | Ø | |

```
START  VERIFY     9:43:33
END    VERIFY    1Ø:14:53
```

### NOTE

If any messages appear between the START message and the END message, there are errors in the files you received. Do not proceed any further.

The last two messages signify the beginning and ending of the test. If the first test (VERIFY) finishes without error, go on to Step 194.

### NOTE

In the following steps you should use a tape drive that is not presently available to timesharing users. If you have just completed the steps in Chapter 6, you can give the TOPS-2Ø ASSIGN command to assign the drive that you deassigned in Step 186. Otherwise, perform Steps 168 through 173 in Chapter 6 before continuing with Step 194.

➡ **Step 194:** **Mount a magnetic tape on the drive you want to test.**

The standard tests include a random I/O COBOL test, a random I/O FORTRAN test, and a magtape test for MTAØ:. Test MTAØ requires that a blank magnetic tape be mounted on drive Ø. If you want to test a tape drive other than drive Ø, you must enable the test for the selected drive.

To enable the test for a specific drive, type ENABLE MTAn and press the RETURN key (n indicates the number of the drive; for example, MTA1, MTA2).

```
UETP>ENABLE MTAn <RET>
[hh:mm:ss   ENABLE COMPLETED]

UETP>
```

Now mount a magnetic tape on the drive you want to test. Be sure that a write ring has been inserted in the tape and that the drive is on line before proceeding to the next step.

➡ **Step 195:** **Type BEGIN and press the RETURN key.**

To start the remaining tests, type BEGIN. The system then prints a series of messages.

```
UETP>BEGIN <RET>
[hh:mm:ss  BEGIN COMPLETED]

UETP>

        START  RANCBL  hh:mm:ss
        START  RANFOR  hh:mm:ss
        START  MTAØ    hh:mm:ss
        END    RANCBL  hh:mm:ss
        END    RANFOR  hh:mm:ss
        END    MTAØ    hh:mm:ss
```

If messages other than those shown in the example appear, the tests
generating the messages have failed.

**➡ Step 196:  STOP.**

When all tests are completed, the system prints the following status
information:

    [All tests complete on processor # 21Ø2]

    [dd-mmm-yy hh:mm:ss]

```
    Test   Depth Status  Cycle Times Error Error Start
    name                       run   count limit time
    ====== ===== ======= ===== ===== ===== ===== =====
    VERIFY VER   Ended       1     1     Ø     Ø dd-mmm-yy hh:mm:ss
    RANCBL VER   Ended    Ø:15     1     Ø     Ø dd-mmm-yy hh:mm:ss
    RANFOR VER   Ended    Ø:15     1     Ø     Ø dd-mmm-yy hh:mm:ss
    MTAØ   VER   Ended    Ø:15     1     Ø     Ø dd-mmm-yy hh:mm:ss
```

**➡ Step 197:  STOP.**

At this point you can either type EXIT to terminate UETP, or begin the
tests for optional software.  The following step (Step 198) shows how
to terminate UETP.  If you want to test optional software, you should
skip Step 198 and proceed to Step 199.

**➡ Step 198:  Type EXIT and press the RETURN key.**

Type EXIT to end UETP.  Then continue at Step 2Ø3.

```
    UETP>EXIT <RET>
    $
```

## 7.2  RUNNING OPTIONAL TESTS

The steps in this section describe how to enable tests for optional
software products.  Be sure to enable tests only for the optional
software products you have installed.

Table 7-1 contains a list of optional software products for TOPS-2Ø
and the UETP command needed to start the test for the product.

Table 7-1:   UETP Commands for Optional Software Product Tests

| Product | UETP Command |
|---------|--------------|
| ALGOL-20 | ENABLE ALGOL |
| APL-20 | ENABLE APL |
| BASIC-PLUS-2 | ENABLE BASIC |
| COBOL-68 | ENABLE COBOL |
| COBOL-74 | ENABLE CBL74 |
| DBMS-20 | ENABLE DBMS |
| FORTRAN | ENABLE FORTRA |
| SORT-20 | ENABLE SORT |

➡ Step 199:   Start tests for optional software products.

To start a test for an optional software product, do the following:

1.  Type ENABLE product-name and press the RETURN key.  (Refer to Table 7-1 for the correct command for your specific product.)

        UETP>ENABLE product-name <RET>
        [hh:mm:ss   ENABLE COMPLETED]

        UETP>

2.  Type an ENABLE command for each product you wish to test.

3.  Type BEGIN and press the RETURN key.

        UETP>BEGIN <RET>
        [hh:mm:ss   BEGIN COMPLETED]

        UETP>

    BEGIN starts the standard tests and all the optional software tests you enabled.  The system starts all the tests immediately.

➡ Step 200:   Type STATUS and press the RETURN key.

Periodically give a STATUS command to find out which tests are running and how many times they have been run.

NOTE

    If there is a number other than 0 (zero) in the column ERROR COUNT, print the ERRORS.LOG file, when the tests are finished, to find out what caused the error.

```
STATUS <RET>

[dd-mmm-yy hh:mm:ss]

   Test   Depth Status  Cycle Times Error Error Start
   name                       run   count limit time
   ====== ===== ======= ===== ===== ===== ===== =====
   VERIFY VER   Ended       1     1     0     0 dd-mmm-yy hh:mm:ss
   RANCBL VER   Running  0:15     0     0     0 dd-mmm-yy hh:mm:ss
   RANFOR VER   Queued   0:15     0     0     0 dd-mmm-yy hh:mm:ss
   MTA0   VER   Queued   0:15     0     0     0 dd-mmm-yy hh:mm:ss
```

In the example, the RANCBL.SUP test is running, the RANFOR.SUP and MTA0.SUP tests are in a wait state, and the VERIFY.SUP test has ended.

**➡ Step 201:  Type STATUS and press the RETURN key.**

The UETP program does not notify you when all the tests are completed. To find out when all the tests are completed, give a STATUS command. When all the tests are completed, your output from the STATUS command resembles the following:

```
STATUS <RET>

[dd-mmm-yy hh:mm:ss]

   Test   Depth Status  Cycle Times Error Error Start
   name                       run   count limit time
   ====== ===== ======= ===== ===== ===== ===== =====
   VERIFY VER   Ended       1     1     0     0 dd-mmm-yy hh:mm:ss
   RANCBL VER   Ended    0:15     1     0     0 dd-mmm-yy hh:mm:ss
   RANFOR VER   Ended    0:15     1     0     0 dd-mmm-yy hh:mm:ss
   MTA0   VER   Ended    0:15     1     0     0 dd-mmm-yy hh:mm:ss
```

**➡ Step 202:  Type EXIT and press the RETURN key.**

To exit from the UETP program, type EXIT. The system prints the TOPS-20 ENABLEd prompt ($).

```
EXIT <RET>
$
```

Error:  If you try to exit while there are tests still running, the system prints the message "%You still have tests running. "ABORT ALL" before exiting." Wait until all the tests are completed and then reissue the EXIT command.

## 7.3  DELETING TEMPORARY DIRECTORIES

Perform Steps 203 through 208 to delete the temporary directories created by UETP and to return to a timesharing environment.

**➡ Step 203:  Type TAKE <UETP.LIB>CLEAN-UP.CMD and press the RETURN key.**

To delete the temporary directories, type TAKE <UETP.LIB>CLEAN-UP.CMD. The system prints the word [Old] for each directory it deletes.

```
$TAKE <UETP.LIB>CLEAN-UP.CMD <RET>
[Old]
[Old]
    .
    .
    .
End of <UETP.LIB>CLEAN-UP.CMD.3
$
```

●

➡ Step 204:  Type DEASSIGN MTAn:  and press the RETURN key.

| Type DEASSIGN MTAn:  to release the magnetic tape  drive  for  use  by
| other users.  This is the tape drive you assigned prior to Step 194.
|
|      $DEASSIGN MTA0: <RET>
|      $


➡ Step 205:  Type OPR and press the RETURN key.

| To return the CTY to the OPR program, type OPR.
|
|      $OPR <RET>
|      OPR>


➡ Step 206:  Type SET TAPE-DRIVE MTAn:  AVAILABLE and press  the  RETURN
              key.

| To return the tape drive you used to the pool of available  resources,
| type SET TAPE-DRIVE MTAn:  AVAILABLE.
|
|      OPR>SET TAPE-DRIVE MTA0: AVAILABLE <RET>
|      OPR>
|      hh:mm:ss           -- Tape Drive Set Available --
|                   MTA0: set available for assignment by MOUNTR
|      SJ  0: OPR>
|      SJ  0: hh:mm:ss        -- Tape Drive Set Available --
|      SJ  0:             MTA0: set available for assignment by MOUNTR
|      OPR>


➡ Step 207:  Type EXIT and press the RETURN key.

| Type EXIT to leave the OPR program.
|
|      OPR>EXIT <RET>
|      $


➡ Step 208:  Start timesharing.

# APPENDIX A

## UPDATING THE DECSYSTEM-20 SOFTWARE

This appendix describes how to install Version 6.1 software on a DECSYSTEM-20 now running TOPS-20 Version 5.1 software and is organized as follows:

A.1  Installation Tools

> Lists the tools you need to install the software.

A.2  Installing the TOPS-20 Version 6.1 Software

> Describes how to prepare for installation, load the bundled software from magnetic tape, create a new configuration command file, shut down the Version 5.1 system, and bring up the Version 6.1 system.

A.3  Reverting to TOPS-20 Version 5.1

> Describes how to run Version 5.1 software after running Version 6.1.

A.4  Making the Version 6.1 Monitor the Primary Monitor

> Describes the procedure for making the Version 6.1 monitor your primary monitor by renaming the monitor and placing the Version 6.1 front-end software on disk.

A.5  Making the Version 6.1 Monitor the Permanent Monitor

> Describes the procedure for making the Version 6.1 monitor your permanent monitor by placing the Version 6.1 software in the directories <SYSTEM> and <SUBSYS> and changing the configuration command file.

As you update the system, enter the commands in **BOLD PRINT**. Use the console terminal (CTY) when performing these procedures.


## A.1  INSTALLATION TOOLS

To install the TOPS-20 Version 6.1 software, you need:

- The TOPS-20 RSX-20F Version 15-21 System Floppy A.

- The TOPS-20 RSX-20F Version 15-21 System Floppy B.

- The TOPS-20 RSX-20F Version 15-21 System Floppy C.


A-1

● The TOPS-20 Installation Tape Version 6.1.

● A separate tape for each optional software product you have purchased.

Refer to Chapter 1, Sections 1.2.1 and 1.2.2, for information about the floppies and Installation tape.

## A.2 INSTALLING THE VERSION 6.1 SOFTWARE

The installation of TOPS-20 Version 6.1 software is divided into eight tasks:

1. Preparing for installation.

2. Creating the system directories.

3. Restoring the bundled software.

4. Renaming the Version 5.1 monitor.

5. Creating the new configuration command file.

6. Setting parameters for the directory <OPERATOR>.

7. Shutting down the DECSYSTEM-20.

8. Starting the new software.

### A.2.1 Preparing for Installation

Before you begin your installation, read the listing labeled TOPS-20.BWR. This listing describes any last minute changes made to the installation procedure or to the TOPS-20 software. Then, to prepare the system for Version 6.1 software,

● Run CHECKD.

● Obtain the number of free pages on the public structure.

● Delete directories created by UETP.

● Mount the Version 6.1 Installation tape.

To prepare for installation, perform Steps 1 through 17.

Step 1:  Log in and enable WHEEL or OPERATOR privileges.

You must be enabled and have privileges to perform these procedures. Follow the example to log in and enable your capabilities.

```
Installation-test System, TOPS-20 Monitor 5.1(15054)
@LOGIN OPERATOR your-password <RET>
 Job 3 on TTY9 23-May-85 16:56:38
@ENABLE <RET>
$
```

NOTE

If you are using the OPR program at the CTY, give the
EXIT command to OPR to return to TOPS-20 command
level.


**Step 2: Run CHECKD.**

You must run CHECKD before installing the new software. This is done
to verify that the directories on the public structure (PS:) are
intact. Follow the example to run CHECKD.

```
$CHECKD <RET>
CHECKD>CHECK DIRECTORY PS: <RET>

[WORKING ON STRUCTURE - PS:]

CHECKD>EXIT <RET>
$
```

Depending on what CHECKD finds, you may have a long wait while CHECKD
works on checking PS:. The ouput you receive while running CHECKD may
or may not resemble the output in the example. Refer to the CHECKD
Specification for more information.


**Step 3: Type INFORMATION DISK-USAGE and press the RETURN key.**

You must have enough disk space on your public structure (PS:) before
you can proceed. To find out how many free pages there are on PS:,
type INFORMATION DISK-USAGE. The system prints the number of pages
assigned to you and the number of free pages on PS:.

```
$INFORMATION DISK-USAGE <RET>
 PS:<OPERATOR>
 1942 Pages assigned, 1925 in use, 1 deleted
 5000 Working pages, 5000 Permanent pages allowed
 27180 Pages free on PS:, 189196 pages used.
 $
```

NOTE

The number of free pages on PS: must be at least 6000.
If you do not have at least this number of pages free,
you must dump some files to tape or delete and expunge
some files.


**Step 4: Type TAKE PS:<UETP.LIB>CLEAN-UP.CMD and press the RETURN key.**

Before installing the new software, you must delete the various
directories created by UETP. Type the TAKE command to do so.

```
$TAKE PS:<UETP.LIB>CLEAN-UP.CMD <RET>
[Old]
[Old]
   .
   .
   .
 End of <UETP.LIB>CLEAN-UP.CMD
 $
```

➡️Step 5:   Type CONNECT PS:<SYSTEM> and press the RETURN key.

| You must be connected to another directory in order to perform the
| following steps.
|
|        $CONNECT PS:<SYSTEM> <RET>
|        $


➡️Step 6:   Type BUILD PS:<UETP.LIB> and press the RETURN key.

Before you can load the new version of the UETP program onto PS:, you
must delete the old version of the PS:<UETP.LIB> directory.

|        $BUILD PS:<UETP.LIB> <RET>
         [Old]
         $$
|
|                              NOTE
|
|        If you find that the UETP directories do not exist on
|        your  system,  ignore  any  error messages you receive
|        while deleting them in the following steps.


➡️Step 7:   Type KILL and press the RETURN key.

Use the KILL command to delete the old PS:<UETP.LIB> directory.

         $$KILL <RET>
         [Confirm]


➡️Step 8:   Press the RETURN key twice.

To confirm you are deleting PS:<UETP.LIB>, press the RETURN key twice.

         [Confirm]<RET>
         $$<RET>
         $


➡️Step 9:   Delete the directories PS:<UETP.RUN> and PS:<UETP>.

| Follow the example to delete PS:<UETP.RUN> and PS:<UETP>.

|        $BUILD PS:<UETP.RUN> <RET>
         [Old]
         $$KILL <RET>
         [Confirm]<RET>
         $$<RET>
|        $BUILD PS:<UETP> <RET>
         [Old]
         $$KILL <RET>
         [Confirm]<RET>
         $$<RET>
         $
●

                              NOTE

|        If you have tape drive allocation enabled, perform
|        Steps 10 through 14.  Otherwise, continue at Step 15.


A-4

➡ <u>Step 1Ø</u>:  <u>Type OPR and press the RETURN key.</u>

Type OPR to run the OPR program.

```
$OPR <RET>
OPR>
```

➡ <u>Step 11</u>:  <u>Type SHOW STATUS TAPE-DRIVE /ALL and press the RETURN key.</u>

To find out what drives on the system are available to mount the Installation tape, type SHOW STATUS TAPE-DRIVE /ALL. The system prints the status of all tape drives on the system. Use any tape drive that has the status of "UNLOADED" for mounting the Installation tape.

```
OPR>SHOW STATUS TAPE-DRIVE /ALL <RET>
OPR>
17:ØØ:Ø9              --Tape Drive Status--
DRIVE     STATE   VOLID     REQ#    JOB#   USER
-----     -----   -----     ----    ----   ----
MTAØ:     Available
MTA1:     Unloaded
          AVR: Yes
MTA2:     Unloaded
          AVR: Yes
MTA3:     Unloaded
          AVR: Yes
MTA7:     Unavailable
OPR>
```

➡ <u>Step 12</u>:  <u>Type SET TAPE-DRIVE MTAn UNAVAILABLE and press the RETURN key.</u>

To mount the TOPS-2Ø Installation tape, you should first make an available tape drive unavailable to timesharing users. To do this, type SET TAPE-DRIVE MTAn UNAVAILABLE. The example uses MTAØ: as the tape drive, but you can specify any tape drive that is not in use at the moment.

```
OPR>SET TAPE-DRIVE MTAØ: UNAVAILABLE <RET>
Enter text and terminate with ^Z
```

➡ <u>Step 13</u>:  <u>Type INSTALLING VERSION 6.1 SOFTWARE and press <CTRL/Z>.</u>

After the system prints "Enter text and terminate with ^Z," type the text INSTALLING VERSION 6.1 SOFTWARE and then type <CTRL/Z>. The system prints the OPR prompt and several messages.

```
Enter text and terminate with ^Z
INSTALLING VERSION 6.1 SOFTWARE ^Z
OPR>
17:Ø1:41        -- Tape Drive Set Unavailable --
          MTAØ: set unavailable for assignment by MOUNTR
SJ  Ø: PTYCON>
SJ  Ø: **** OPR(6) 17:Ø1:41 ****
SJ  Ø:
SJ  Ø: 17:Ø1:41       -- Tape Drive Set Unavailable --
SJ  Ø:            MTAØ: set unavailable for assignment by MOUNTR
SJ  Ø: OPR>
OPR>
```

➡ Step 14:  Type EXIT and press the RETURN key.

| To return to TOPS-20 command level and continue the installation
| procedures, type EXIT.  The system prints the ENABLEd prompt ($).
|
|     OPR>EXIT <RET>
|     $
●

➡ Step 15:  Type ASSIGN MTA0:  and press the RETURN key.

  To assign tape drive 0 to your job, type  ASSIGN  MTA0:.  The  system
  prints the ENABLEd prompt ($).

      $ASSIGN MTA0: <RET>
      $

Step 16:  Mount the Version 6.1 Installation tape on MTA0:.

| Mount the Version 6.1 Installation tape on the tape  drive.  Be  sure
| the drive is on line.

➡ Step 17:  Type REWIND MTA0:  and press the RETURN key.

| To position the tape at its beginning, type the REWIND command.
|
|     $REWIND MTA0: <RET>
|     $
|
|
|
| A.2.2  Creating System Directories
|
| You must create directories  to  store  system  files  and  files  for
| testing  the  system.  You  create  these  directories by running the
| DLUSER program (Steps 18 through 21).

➡ Step 18:  Type SKIP MTA0:  2 FILES and press the RETURN key.

| Type SKIP MTA0:  2 FILES to position the tape at the DLUSER program.
|
|     $SKIP MTA0: 2 FILES <RET>
|     $

➡ Step 19:  Type RUN MTA0:  and press the RETURN key.

  To run the DLUSER program from magnetic tape, type RUN  MTA0:.  After
  the DLUSER program starts, the system prints the DLUSER prompt.

      $RUN MTA0: <RET>
      DLUSER>

  Error:    If you make a typing mistake,  rewind  the  tape,  skip  two
            files, and reissue the above command.  The following example
            shows how to do this when the Installation tape is on MTA0:.

                $REWIND MTA0: <RET>
                $SKIP MTA0: 2 FILES <RET>
                $RUN MTA0: <RET>
                DLUSER>

➡ Step 20:  Type LOAD MTAØ:  and press the RETURN key.

To load the parameters for the directories <UETP> and <SYSTEM-ERROR>
into the file system from the TOPS-20 Installation tape, type LOAD
MTAØ:.  After a few seconds, the system prints DONE. and gives the
DLUSER prompt.

     DLUSER>LOAD MTAØ: <RET>

     DONE.
     DLUSER>


➡ Step 21:  Type EXIT and press the RETURN key.

Type EXIT to leave the DLUSER program.  The system prints the  TOPS-20
ENABLEd prompt ($).

     DLUSER>EXIT <RET>
     $

NOTE

You may want to check the directories before restoring
the Version 6.1 software. To do so, type the command
INFORMATION DISK-USAGE PS:<*>. Be sure that the old
versions of the files are cleared from the directories
that you will be using for Version 6.1 files.


A.2.3  Restoring TOPS-20 Bundled Software from Tape

The DUMPER program places files from the magnetic tape into the
TOPS-20 file system.  (The DUMPER program is the fifth file on the
Installation tape.)  Once you have DUMPER running, restore the files
to the directories  PS:<NEW-SYSTEM>,  PS:<NEW-SUBSYS>, and
PS:<UETP.LIB>.

Perform Steps 22 through 34 to run DUMPER, to restore the bundled
software, and to dismount the Installation tape.


➡ Step 22:  Type RUN MTAØ:  and press the RETURN key.

To run the DUMPER program, type RUN MTAØ:.  After the  DUMPER  program
starts, the system prints the DUMPER prompt.

     $RUN MTAØ: <RET>
     DUMPER>

Error:    If you receive any errors, rewind the tape, skip four  files
           and  reissue the command above.  The following example shows
           how to do this for MTAØ:.  If errors still persist,  contact
           DIGITAL Software Support.

           $REWIND MTAØ: <RET>
           $SKIP MTAØ: 4 FILES <RET>
           $RUN MTAØ: <RET>
           DUMPER>

➡ Step 23:  Type TAPE MTA0:  and press the RETURN key.  Then type
            ACCOUNT SYSTEM-DEFAULT and press the RETURN key.

| To tell the DUMPER program which tape drive you are using,  type TAPE
| MTA0:.  Then  type  ACCOUNT  SYSTEM-DEFAULT to tell DUMPER to use the
| system-default account.
|
|       DUMPER>TAPE MTA0: <RET>
|       DUMPER>ACCOUNT SYSTEM-DEFAULT <RET>
|       DUMPER>


➡ Step 24:  Type FILES and press the RETURN key (optional).

  To have the files being restored into the individual directories typed
  on your terminal, type FILES.  The system prints the DUMPER prompt.

        DUMPER>FILES <RET>
        DUMPER>


➡ Step 25:  Type RESTORE PS:<*>*.*.* PS:<NEW-SYSTEM>*.*.* and press  the
            RETURN key.

  To copy  the  TOPS-20  monitor  and  its  related  programs  from  the
  Installation  tape to your public structure, type the RESTORE command.
  This DUMPER command restores all the files in the first saveset to the
  directory PS:<NEW-SYSTEM>.  Then the system prints the DUMPER prompt.

|       DUMPER>RESTORE PS:<*>*.*.* PS:<NEW-SYSTEM>*.*.* <RET>
|       Saveset ""SYSTEM FILES FOR TOPS-20 V6.1""
|       Loading files into PS:<NEW-SYSTEM>
|       End of Saveset.
|
|
|       Total files restored:    n
|       Total pages restored:    n
|       DUMPER>
|
|                              NOTE
|
|       You may receive an error message from DUMPER about  it
|       deleting existing files.  This happens when you do not
|       delete the previous version of software and write over
|       the  files.   This is an informational message and you
|       should continue with your installation.


➡ Step 26:  Type RESTORE PS:<*>*.*.* PS:<NEW-SUBSYS>*.*.* and press  the
            RETURN key.

  To restore the system program files to the directory  PS:<NEW-SUBSYS>,
  type the RESTORE command.  The system prints the DUMPER prompt.

|       DUMPER>RESTORE PS:<*>*.*.* PS:<NEW-SUBSYS>*.*.* <RET>
|       Saveset ""SUBSYS FILES FOR TOPS-20 V6.1""
|       Loading files into PS:<NEW-SUBSYS>
|       End of Saveset.
|
|
|       Total files restored:    n
|       Total pages restored:    n
|       DUMPER>

➡ Step 27:  Type RESTORE PS:<*>*.*.* PS:<NEW-SUBSYS>*.*.* and press the
           RETURN key.

To restore the GALAXY files into the directory  PS:<NEW-SUBSYS>,  type
the  RESTORE  command.   When  all  the files are restored, the system
prints the DUMPER prompt.

        DUMPER>RESTORE PS:<*>*.*.* PS:<NEW-SUBSYS>*.*.* <RET>
         Saveset ""GALAXY SUBSYS FILES FOR TOPS-20 V6.1""
         Loading files into PS:<NEW-SUBSYS>
         End of Saveset.


         Total files restored:     n
         Total pages restored:     n
        DUMPER>


➡ Step 28:  Type RESTORE PS:<*>*.*.* PS:<UETP.LIB>*.*.*  and  press  the
           RETURN key.

To restore the files for the User  Environment  Test  Package  (UETP),
type the RESTORE command.  When all the files are restored, the system
prints the DUMPER prompt.

        DUMPER>RESTORE PS:<*>*.*.* PS:<UETP.LIB>*.*.* <RET>
         Saveset ""UETP FILES FOR TOPS-20 V6.1""
         Loading files into PS:<UETP.LIB>
         End of Tape.


         Total files restored:     n
         Total pages restored:     n
        DUMPER>

➡ Step 29:  Type EXIT and press the RETURN key.

Type EXIT to end DUMPER and to return to TOPS-20 command level.

        DUMPER>EXIT <RET>
        $


➡ Step 30:  Type UNLOAD MTA0:  and press the RETURN key.

To unload the Installation tape  from  the  tape  drive,  type  UNLOAD
MTA0:.  The system rewinds and unloads the tape from the drive.

        $UNLOAD MTA0: <RET>
        $

You can now remove the tape from the tape drive.


➡ Step 31:  Type DEASSIGN MTA0:  and press the RETURN key.

To remove the device MTA0:  from your job, type DEASSIGN  MTA0:.   The
system prints the ENABLEd prompt ($).

        $DEASSIGN MTA0: <RET>
        $

NOTE

If you performed Step 12, which removed a tape drive
from the system's usage, perform Steps 32 through 34.
Otherwise, continue at Step 35.

**Step 32:**  **Type OPR and press the RETURN key.**

To return to OPR command level, type OPR.

```
$OPR <RET>
OPR>
```

**Step 33:**  **Type SET TAPE-DRIVE MTAn: AVAILABLE and press the RETURN
key.**

To return the tape drive you removed from system usage in Step 12,
type SET TAPE-DRIVE MTAn: AVAILABLE. The example uses MTA0:.

```
OPR>SET TAPE-DRIVE MTA0: AVAILABLE <RET>
OPR>
17:23:53        -- Tape Drive Set Available --
            MTA0: set available for assignment by MOUNTR
SJ  0: PTYCON>
SJ  0: **** OPR(6) 17:23:53 ****
SJ  0:
SJ  0: 17:23:53        -- Tape Drive Set Available --
SJ  0:            MTA0: set available for assignment by MOUNTR
SJ  0: OPR>
OPR>
```

**Step 34:**  **Type EXIT and press the RETURN key.**

To return to TOPS-20 command level and continue the installation
procedures, type EXIT. The system prints the ENABLEd prompt ($).

```
OPR>EXIT <RET>
$
```

## A.2.4  Renaming the Version 5.1 Monitor

In case you ever need to revert to the Version 5.1 monitor, you must
rename it before copying the Version 6.1 monitor into
<SYSTEM>MONITR.EXE. Perform Steps 35 through 38 to rename the Version
5.1 monitor and to copy the Version 6.1 monitor and certain network
files to <SYSTEM>.

**Step 35:**  **Type CONNECT PS:<SYSTEM> and press the RETURN key.**

You must be connected to the appropriate directory to perform these
procedures.

```
$CONNECT PS:<SYSTEM> <RET>
$
```

➡ Step 36:   Type RENAME   MONITR.EXE.*   5-1-MONITR.EXE.*   and   press   the
             RETURN key.

| To rename and save the Version 5.1 monitor, type the  RENAME  command.
When   the   rename is successfully completed, the system prints an [OK]
message.

|        $RENAME MONITR.EXE.* 5-1-MONITR.EXE.* <RET>
|         MONITR.EXE.n => 5-1-MONITR.EXE.n [OK]
         $
|
|                         TCP/IP Installations
|
|            If you are performing a TCP/IP installation, you  must
|            choose   a   TOPS-20   monitor   at   this time.  After you
|            restore the TCP/IP Distribution tape, you will be able
|            to choose a TCP/IP monitor.


➡ Step 37:   Type COPY PS:<NEW-SYSTEM>montyp.EXE.* MONITR.EXE.* and press
             the RETURN key.

| To copy the Version   6.1   monitor   into   PS:<SYSTEM>,   type   the   COPY
command.    "Montyp"   designates   the type of monitor you have selected
| for your system;   for   example,   2060-MONBIG.   (Refer   to   Chapter   3
| Section   3.1   for   information   about   choosing   a   monitor   for   your
system.)  When the copy is successfully completed, the   system   prints
an [OK] message.

        $COPY PS:<NEW-SYSTEM>montyp.EXE.* MONITR.EXE.* <RET>
        <NEW-SYSTEM>montyp.EXE.n => MONITR.EXE.n [OK]
        $


➡ Step 38:   Type COPY PS:<NEW-SYSTEM>IPALOD.EXE.* IPALOD.EXE.* and press
             the RETURN key.

| The file IPALOD.EXE must be in the directory <SYSTEM> in order for the
| CI20 microcode to be loaded properly in Step 57 of this appendix.   To
| do this, type   the   COPY command.   When   the   copy   is   successfully
| completed, the system prints an [OK] message.
|
|        $COPY PS:<NEW-SYSTEM>IPALOD.EXE.* IPALOD.EXE.* <RET>
|        <NEW-SYSTEM>IPALOD.EXE.n => IPALOD.EXE.n [OK]
|        $


➡ Step 39:   Type COPY PS:<NEW-SYSTEM>KNILDR.EXE.* KNILDR.EXE.* and press
             the RETURN key.

| The file KNILDR.EXE must be in the directory <SYSTEM> in order for the
| Ethernet  microcode to be loaded properly in Step 57 of this appendix.
| To do this, type the COPY command.   When   the   copy   is   successfully
| completed, the system prints an [OK] message.
|
|        $COPY PS:<NEW-SYSTEM>KNILDR.EXE.* KNILDR.EXE.* <RET>
|        <NEW-SYSTEM>KNILDR.EXE.n => KNILDR.EXE.n [OK]
|        $

| A.2.5  Creating the Configuration Command File

You must create the configuration command file to declare system
parameters.  Perform Steps 40 through 43 to create the file
<NEW-SYSTEM>6-1-CONFIG.CMD.

                              NOTE

        This section describes how to create the new
        configuration command file.  The steps illustrate the
        use of the EDIT editor program.  You can use any
        editor of your choice, as long as you accomplish the
        goal of each step.


➡ Step 40:   Type EDIT 5-1-CONFIG.CMD  PS:<NEW-SYSTEM>6-1-CONFIG.CMD  and
             press the RETURN key.

To edit 5-1-CONFIG.CMD and have the changes placed in
PS:<NEW-SYSTEM>6-1-CONFIG.CMD, type the EDIT command.  The system
prints "Edit: <SYSTEM>5-1-CONFIG.CMD" and the EDIT prompt.

        $EDIT 5-1-CONFIG.CMD PS:<NEW-SYSTEM>6-1-CONFIG.CMD <RET>
        Edit: PS:<SYSTEM>5-1-CONFIG.CMD.n
        *


➡ Step 41:   Type P^:* and press the RETURN key.

To print the contents of 5-1-CONFIG.CMD, type P^:*.  The system prints
the entire 5-1-CONFIG.CMD file and then the EDIT prompt.

        EDIT: PS:<SYSTEM>5-1-CONFIG.CMD.n
        *P^:* <RET>
                 .
                 .
                 .
        *


➡ Step 42:   Read Chapter 3 of this guide.

Read Chapter 3 of this guide, Tailoring the System, and make any
changes to the system parameters that are necessary.  Five parameters
that must be added are:

        DEFINE SYS: PS:<NEW-SUBSYS>,PS:<SUBSYS>
        DEFINE SYSTEM: PS:<NEW-SYSTEM>,PS:<SYSTEM>
        DEFINE SERR: PS:<SYSTEM-ERROR>
        NODE nodename nodenumber
        LAT-STATE OFF

Other information to be added includes parameters for MSCP-served disk
drives, daylight savings time, remote line conditions, and system
level information.

After you make your changes to the configuration command file by
reading Chapter 3, return to this appendix to continue your update
installation at Step 43.

NOTE

When you are making a change to existing lines of the
5-1-CONFIG.CMD file, use the EDIT command "R
line-number." Any changes made to the system
parameters are made in <NEW-SYSTEM>6-1-CONFIG.CMD.
The file <SYSTEM>5-1-CONFIG.CMD remains the same.

➡ Step 43:   Press the ESCape key.   Type EU and press the RETURN key.

After you make all the necessary changes to the system parameters,
press the ESCape key. Then type EU and press the RETURN key. This
command ends the EDIT program and saves the file. The system prints
the name of the output file.

```
06700   $
*EU <RET>
```

[PS:<NEW-SYSTEM>6-1-CONFIG.CMD.1]
$

NOTE

Before bringing up the system under Version  6.1,  you
should  check  the  6-1-PTYCON.ATO  file  against  the
5-1-PTYCON.ATO file.  You do not have to compare these
files  if  you  have not changed the Version 5.1 file.
However, if you have made  your  own  changes  to  the
5-1-PTYCON.ATO  file  and  you  wish  those changes to
exist under Version 6.1, you must add the  changes  to
the 6-1-PTYCON.ATO file.

## A.2.6  Setting Parameters for <OPERATOR>

You must be certain that the operator is a member of  user  group  100
and  has  IPCF (InterProcess Communication Facility) capabilities.  Do
so by giving the commands in Steps 44 through 47.

➡ Step 44:   Type BUILD PS:<OPERATOR> and press the RETURN key.

Type  BUILD  PS:<OPERATOR>.   The  system  prints  [Old],  then  the
subcommand prompt ($$).

```
$BUILD PS:<OPERATOR> <RET>
[Old]
$$
```

➡ Step 45:   Type USER 100 and press the RETURN key.

At the subcommand prompt, type USER 100 to make the operator a  member
of user group 100.

```
$$USER 100 <RET>
$$
```

➡Step 46:   Type IPCF and press the RETURN key.

| Type IPCF to give the operator IPCF capabilities.

        $$IPCF <RET>
        $$


➡Step 47:   Press the RETURN key.

To exit from subcommand level, press the RETURN key.

        $$<RET>
        $
|
|                        TCP/IP Installations
|
|        If you are installing TCP/IP-20, proceed  to  Appendix
|        C, Section C.3, Step 2.
|
|
|
| A.2.7  Shutting Down the DECSYSTEM-20
|
| To shut down the Version 5.1 software  on  the  DECSYSTEM-20,  perform
| Steps 48 through 50.


➡Step 48:   Type ^ECEASE +1 and press the RETURN key.

To bring the system down in one minute, type ^ECEASE +1.   The  system
prints several messages.   The last message is "Shutdown complete."

|        $^ECEASE +1 <RET>
|
|        [System going down in one minute!!]
|        $
|        [System down]
|
|        SJ  0: PTYCON> Killed Job n, User name, Account name, TTY n,
|        SJ  0:    dd-mmm-yy hh:mm:ss, Used h:mm:ss in h:mm:ss
|
|        Shutdown complete
|
|                              NOTE
|
|        Do not proceed to Step  49  until  the  system  prints
|        "Shutdown complete."


➡Step 49:   Type <CTRL/\>.

At the console terminal, type <CTRL/\>  to  return  to  the  front-end
Command  Parser.   When  you  are at Command Parser command level, the
system prints the prompt PAR>.

        <CTRL/\>
        PAR>


➡Step 50:   Type SHUTDOWN and press the RETURN key.

To stop the TOPS-20 monitor, type SHUTDOWN.


                              A-14

```
PAR>SHUTDOWN <RET>
**HALTED**

%DECSYSTEM-20 NOT RUNNING
```

## A.2.8  Starting the New Software

To start the Version 6.1 software, perform Steps 51 through 62.


➡ Step 51:  Type <CTRL/\>.

Type <CTRL/\> to return to the front-end Command Parser.  Because  the
system  is  not running, you will see the prompt PAR%.  If you see the
prompt PAR> instead, go back to Step 50.

```
<CTRL/\>
PAR%
```


➡ Step 52:  Type RUN PIP and press the RETURN key.

To load the PIP program and start it, type RUN PIP.  After  1  second,
PIP  is  ready for you to type commands.  The system prints the prompt
PIP>.

```
PAR%RUN PIP <RET>

PIP>
```


➡ Step 53:  Type KL.CFG;*/DE and press the RETURN key.

You must delete any existing front-end configuration  file  from  your
front-end  file  system  before  bringing up the Version 6.1 front-end
monitor.

```
PIP>KL.CFG;*/DE <RET>
PIP>
```

                              NOTE

        If the system prints PIP -- NO SUCH FILE(S), then  you
        did  not  have  a front-end configuration file in your
        front-end file system.  Proceed to Step 54.

➡ Step 54:  Type <CTRL/Z> and <CTRL/\>.

To end PIP and return to the front-end Command Parser,  type  <CTRL/Z>
followed by <CTRL/\>.

```
PIP>^Z

<CTRL/\>
PAR%
```

➡ Step 55:   Mount the Version 6.1 System Floppy A in floppy drive 0   and
             the Version 6.1 System Floppy B in floppy drive 1.

| To run the Version 6.1 front-end software, mount System  Floppy  A  in
| drive 0 and System Floppy B in drive 1.


➡ Step 56:   Set the switch register to 000007 (octal).

| Set the switch register to 000007 (octal) by placing  switches  0,  1,
| and 2 up.


➡ Step 57:   Press the ENABLE and SWITCH-REGISTER buttons simultaneously.

| To bring up the Version 6.1 front-end file system,  press  the  ENABLE
| and  SWITCH-REGISTER  buttons  simultaneously.   The  system  prints a
| series of messages.

|         RSX-20F VB15-21 12:19 13-NOV-84

          [SY0:   redirected to DX0:]
          [DX0:   mounted]
          [DX1:   mounted]
|         KLI -- VERSION VB15-15 RUNNING
          KLI -- ENTER DIALOG [NO,YES,EXIT,BOOT]?
          KLI>


➡ Step 58:   Type NO and press the RETURN key.

   To tell the front-end monitor that you want it to take default answers
   to  dialog  questions,  type NO.  The front end prints messages as the
   system is reloaded, and the bootstrap program gives the BOOT> prompt.

          KLI -- ENTER DIALOG  [NO,YES,EXIT,BOOT]?
          KLI>NO <RET>
          KLI -- KL10 S/N:2102., MODEL B,  60 HERTZ
          KLI -- KL10 HARDWARE ENVIRONMENT:
                 MOS MASTER OSCILLATOR
                 EXTENDED ADDRESSING
                 INTERNAL CHANNELS
                 CACHE

|         KLI -- MICROCODE Version 2.0[407] LOADED
          KLI -- ALL CACHES ENABLED

          LOGICAL MEMORY CONFIGURATION.
           ADDRESS   SIZE   INT TYPE CONTROLLER
          00000000   768K    4  MF20   10

          KLI -- CONFIGURATION FILE WRITTEN
          KLI -- BOOTSTRAP LOADED AND STARTED

|         BOOT V11.0(311)
●
          BOOT>


➡ Step 59:   Press the RETURN key.

   To tell BOOT to restart the system, press the RETURN key.  The  system
   prints several messages before prompting for the date and time.

```
BOOT><RET>
[BOOT:LOADING] [OK]


[PS MOUNTED]

[INDEX-TABLE BEING INITIALIZED FOR PPN SUPPORT]

[IPALOD: LOADING CI20 MICROCODE 1.00(705)] [OK]

System restarting, wait...
ENTER CURRENT DATE AND TIME:
```

<center>NOTE</center>

If the system structure name is <u>not</u> PS:, the BOOT
program asks for the name.


<center>CI20</center>

You will receive the message concerning the CI20
microcode <u>only</u> if you are installing the TOPS-20
software on a DECSYSTEM-20 with CI20.


➡ <u>Step 60</u>:  <u>Type the date and time, then press the RETURN key.</u>

After the prompt, type the date and time in the format dd-mmm-yy hhmm.
The time must be in 24-hour format.

```
ENTER CURRENT DATE AND TIME: 23-MAY-85 1750 <RET>

YOU HAVE ENTERED THURSDAY, 23-MAY-1985 5:50 PM,
 IS THIS CORRECT (Y,N)
```

➡ <u>Step 61</u>:  <u>Type Y or N and press the RETURN key.</u>

If you have entered the correct date and time,  type Y.   Otherwise,
type N.  If you type N, the system asks for the date and time again.

```
IS THIS CORRECT (Y,N) Y <RET>
WHY RELOAD?
```

<center>CI20</center>

If your system configuration does not include CI20,
ignore the following message when you start the
monitor:

```
BUGCHK "NOLODF" AT dd-mmm-yy hh:mm
COULD NOT FIND CI-20 MICROCODE LOAD PROGRAM
```

<center>Ethernet</center>

If your system configuration does not include an
Ethernet,  ignore the following message when you start
the monitor:

```
BUGCHK "KNICFF" AT dd-mmm-yy hh:mm:ss
PHYKNI - CANNOT RELOAD THE KLNI
```

<center>A-17</center>

➡️ <u>Step</u> <u>62</u>:  <u>Type</u> <u>NEW</u> <u>and</u> <u>press</u> <u>the</u> <u>RETURN</u> <u>key.</u>

| When the system asks why you are reloading, type NEW.
|
|       WHY RELOAD? **NEW** <RET>
|       [CHECKING FILE CONSISTENCY]
|        Checking system structure.
|
|       [WORKING ON STRUCTURE - PS:]
|
|       %PS:<OPERATOR>PTYCON.LOG.1 IS A "NEW" FILE
|
|       LOCAL COUNT OF FILE PAGES: 58009
|       LOCAL COUNT OF OVERHEAD PAGES: 7873
|       LOCAL COUNT OF USED PAGES: 65882
|
|       SYSTEM COUNT BEFORE CHECKD: 65943
|       SYSTEM COUNT AFTER CHECKD: 65943
|
|       THERE ARE 59 LOST PAGES
|
|        Check of system structure completed.
|       ADDRESSES ARE IN FILE PS:<OPERATOR>PS-LOST-PAGES.BIN.1

        RUNNING DDMP

                                CI20

|               If you have CI20 and it is on,  you  may  receive  a
|               series  of  messages  about  its activities - loading,
|               starting, and opening circuits.  These  messages  are
|               for your information only.

| The CHECKD program examines the entire disk file system,  reports  any
| errors,  and  tries  to  correct the errors. (Your system output will
| probably be different from the example.  See the <u>CHECKD</u> <u>Specification</u>
| for additional information.)  When the system finishes running CHECKD,
| it then runs the DDMP program.  The DDMP program is a background  task
| that  moves pages from the disk swapping area to the disk file system.
| When DDMP finishes, the system runs SYSJOB.

        RUNNING DDMP


|       SYSJOB 6A(20) STARTED AT 23-MAY-85 17:54:12
|       [KNILDR: LOADING MICROCODE VERSION 1(162) INTO ETHERNET CHANNEL
|       0]

        *****
|       23-MAY-85 17:54:12 - TGHA V4(0) IN OPERATION.
        *****
        RUN SYS:INFO
        RUN SYS:MAPPER
        RUN SYS:ORION
        RUN SYS:QUASAR
        RUN SYS:MOUNTR
        RUN SYS:MAILER
        RUN SYS:LPTSPL
|       RUN SYS:LPTSPL
        RUN SYS:CDRIVE
        RUN SYS:SPRINT
        JOB 0 /LOG OPERATOR XX OPERATOR
        ENA

```
^ESET LOGIN PSEUDO
^ESET LOGIN CONSOLE
^ESET OPERATOR
PTYCON
GET SYSTEM:6-1-PTYCON.ATO
/
JOB 1 /LOG OPERATOR XX OPERATOR
ENA
GET SYS:BATCON
/
SJ   0:  @LOG OPERATOR OPERATOR
SJ   1:  @LOG OPERATOR OPERATOR
SJ   0:   JOB 1 ON TTY160 23-MAY-85 17:54:31, LAST LOGIN
23-MAY-85 16:54:56
SJ   1:   JOB 2 ON TTY161 23-MAY-85 17:54:32, LAST LOGIN
23-MAY-85 17:54:31
SJ   0:  @ENA
SJ   1:  @ENA
SJ   1:  $GET SYS:BATCON
SJ   0:  $^ESET LOGIN PSEUDO
SJ   0:  $^ESET LOGIN CONSOLE
SJ   0:  $^ESET OPERATOR
SJ   0:  $PTYCON
SJ   0:  PTYCON> GET SYSTEM:6-1-PTYCON.ATO
SJ   0:  PTYCON> SILENCE

[From OPERATOR on line 162 to all:   SYSTEM IN OPERATION]
SJ   0:  PTYCON> W ALL
SJ   0:  OPR(0)    3          OPERATOR    OPR       TI        0:0:1
SJ   0:  PTYCON> CONN OPR
SJ   0:  [CONNECTED TO SUBJOB OPR(0)]
```

### Ethernet

You will receive the message concerning the Ethernet
microcode only if you are installing the TOPS-20
software on a DECSYSTEM-20 with an Ethernet.

### NOTE

SYSJOB no longer starts SETNOD and MCBs. These are
started by DECnet-20. See the DECnet-20/PSI-20 System
Manager's Guide and the DECnet-20 Network Generation
and Installation Procedures manual for more
information.

**Step 63:  STOP.**

If you want to revert to Version 5.1, follow the steps in Section A.3.

If you want to make Version 6.1 your primary monitor, follow the steps
in Section A.4.

If you want to make Version 6.1 your permanent monitor, follow the
steps in Section A.5.

If you have an RP20 disk subsystem, follow the steps in Section A.4.
These steps make Version 6.1 your primary monitor and load the
front-end files and DX20 microcode onto disk.

## A.3 REVERTING TO VERSION 5.1

If you must revert to running the TOPS-20 Version 5.1 software, follow the steps in this section. If you want the UETP files when you revert to Version 5.1, you must restore the UETP files from either the Version 5.1 Installation tape or the latest backup tape. Perform Steps 1 through 7 to revert to TOPS-20 Version 5.1.

NOTE

If you installed CI20 or NIA20, the Version 5.1 monitor must be patched. Follow the directions in the Version 6.1 Beware file to do so.

**➡ Step 1: Log in and enable WHEEL or OPERATOR privileges.**

You must be enabled and have privileges to perform these procedures. Follow the example to log in and enable your capabilities.

    Installation-test System, TOPS-20 Monitor 6.1(6763)
    @LOGIN OPERATOR your-password <RET>
    Job 5 on TTY8 dd-mmm-yy hh:mm:ss, Last Login dd-mmm-yy hh:mm:ss
    @ENABLE <RET>
    $

**➡ Step 2: Type CONNECT PS:<SYSTEM> and press the RETURN key.**

You must be connected to the appropriate directory to perform these procedures.

    $CONNECT PS:<SYSTEM> <RET>
    $

NOTE

Before reverting to Version 5.1, examine the 5-1-CONFIG.CMD file. Be sure it contains a definition of the logical name SYSTEM:, and that this definition does not include the directory PS:<NEW-SYSTEM>. If the SYSTEM: definition includes the directory PS:<NEW-SYSTEM> and you revert to Version 5.1, the Version 5.1 monitor attempts to operate programs that do not function properly in a Version 5.1 system. If the 5-1-CONFIG.CMD file does not contain a definition of logical name SYSTEM:, insert the following command into the file:

DEFINE SYSTEM:  PS:<SYSTEM>

**➡ Step 3: Type RENAME 5-1-MONITR.EXE.* MONITR.EXE.* and press the RETURN key.**

In Section A.2.4 you renamed the Version 5.1 monitor to PS:<SYSTEM>5-1-MONITR.EXE. If you are reverting to Version 5.1, you must put this monitor back into PS:<SYSTEM>MONITR.EXE. Type the RENAME command to do so. When the rename has been successfully executed, the system prints an [OK] message.

    $RENAME 5-1-MONITR.EXE.* MONITR.EXE.* <RET>
    5-1-MONITR.EXE.n => MONITR.EXE.n [OK]
    $

**➡ Step 4: Type ^ECEASE +00:01 and press the RETURN key.**

To bring the system down in one minute, type ^ECEASE +00:01. After the system prints "[Confirm]," press the RETURN key. The system prints a list of messages. The last message is "Shutdown complete."

```
$^ECEASE +00:01 <RET>
 TOPS20 Shut down scheduled for dd-mmm-yy hh:mm:ss
[Confirm] <RET>

[System going down in one minute!!]
$
[Timesharing is over]

        OPERATOR - WAIT FOR THE MESSAGE "Shutdown complete"
        BEFORE ENTERING COMMANDS TO PARSER

Shutdown complete
```

> **NOTE**
>
> Do not proceed to Step 5 until the system prints "Shutdown complete."

**➡ Step 5: Type <CTRL/\>.**

At the console terminal, type <CTRL/\> to return to the front-end Command Parser. When you are at Command Parser command level, the system prints the prompt PAR>.

```
<CTRL/\>
PAR>
```

**➡ Step 6: Type SHUTDOWN and press the RETURN key.**

To stop the TOPS-20 monitor, type SHUTDOWN.

```
PAR>SHUTDOWN <RET>
**HALTED**

%DECSYSTEM-20 not running
```

**➡ Step 7: Reload the Version 5.1 monitor using the Version 5.1 floppies or the Version 5.1 disk.**

To reload the Version 5.1 monitor using the Version 5.1 floppies, mount System Floppy A in floppy drive 0, press the ENABLE and FLOPPY buttons simultaneously, and answer the usual start-up questions.

To reload the Version 5.1 monitor using the Version 5.1 disk, press the ENABLE and DISK buttons simultaneously, and answer the usual start-up questions.

> **NOTE**
>
> You can reload the Version 5.1 monitor from disk only if the Version 5.1 front-end software is still on the disk.

## A.4  MAKING THE VERSION 6.1 MONITOR THE PRIMARY MONITOR

In case you are presently using the Version 5.1 monitor, you must rename it (Step 4 below) before copying the Version 6.1 monitor into <SYSTEM>MONITR.EXE. You then shut down the system and load the front-end software onto disk.

➡ Step 1:  Log in and enable WHEEL or OPERATOR privileges.

You must be enabled and have privileges to perform these procedures. Follow the example to log in and enable your capabilities.

```
        Installation-test System, TOPS-20 Monitor 6.1(6763)
        @LOGIN OPERATOR your-password <RET>
        Job 5 on TTY8 dd-mmm-yy hh:mm:ss, Last Login dd-mmm-yy hh:mm:ss
        @ENABLE <RET>
        $
```

➡ Step 2:  Type CONNECT PS:<SYSTEM> and press the RETURN key.

You must be connected to the appropriate directory to perform these procedures.

```
        $CONNECT PS:<SYSTEM> <RET>
        $
```

➡ Step 3:  STOP.

Proceed to Step 4 if you have reverted to a Version 5.1 system, and your present monitor is a Version 5.1 monitor. You must rename this monitor (Step 4) in case you ever need to revert to Version 5.1 again.

Skip to Step 5 if your present monitor is a Version 6.1 monitor. You do not need to rename your present monitor (Step 4). This action was already performed in Section A.2.4, Step 36.

➡ Step 4:  Type RENAME MONITR.EXE.* 5-1-MONITR.EXE.* and press the RETURN key.

To rename and save the Version 5.1 monitor, type the RENAME command. When the Version 5.1 monitor is successfully renamed, the system prints an [OK] message.

```
        $RENAME MONITR.EXE.* 5-1-MONITR.EXE.* <RET>
        MONITR.EXE.n => 5-1-MONITR.EXE.n [OK]
        $
```

➡ Step 5:  Type COPY PS:<NEW-SYSTEM>montyp.EXE.* MONITR.EXE.* and press the RETURN key.

To copy the Version 6.1 monitor into PS:<SYSTEM>, type the COPY command. (Montyp designates the type of monitor you have selected for your system.) When the copy is successfully completed, the system prints an [OK] message.

```
        $COPY PS:<NEW-SYSTEM>montyp.EXE.* MONITR.EXE.* <RET>
        <NEW-SYSTEM>montyp.EXE.n => MONITR.EXE.n [OK]
        $
```

➡ Step 6:  Type ^ECEASE +00:01 and press the RETURN key.

| To shut down the system in one minute, type ^ECEASE +00:01.  After the
system prints "[Confirm]," press the RETURN key.  The system prints
several messages.  The last message is "Shutdown complete."

```
        $^ECEASE +00:01 <RET>
         TOPS20 Shut down scheduled for dd-mmm-yy hh:mm:ss
        [Confirm]<RET>

        [System going down in one minute!!]
        $
        [Timesharing is over]

                OPERATOR - WAIT FOR THE MESSAGE "Shutdown complete"
                BEFORE ENTERING COMMANDS TO PARSER

        Shutdown complete
```

                              NOTE

        Do not proceed to  Step  7  until  the  system  prints
        "Shutdown complete."


➡ Step 7:  Put the Version 6.1 front-end software on disk.

| Start at Step 116, in Chapter 4 of this guide, to put the Version  6.1
front-end software on disk.

                              NOTE

        When the Version 6.1  front-end  software  is  put  on
        disk,  the  Version  5.1  front  end is destroyed.  In
        order to use the Version 5.1 front-end software again,
        you must reinstall it using the Version 5.1 floppies.


A.5  MAKING THE VERSION 6.1 MONITOR THE PERMANENT MONITOR

The  steps  in  this  section  should  be  performed  when  you  feel
comfortable with the Version 6.1 software.


➡ Step 1:  Log in and enable WHEEL or OPERATOR privileges.

| You must be enabled and have privileges to perform  these  procedures.
Follow the example to log in and enable your capabilities.

```
        Installation-test System, TOPS-20 Monitor 6.1(6763)
        @LOGIN OPERATOR your-password <RET>
         Job 5 on TTY8 dd-mmm-yy hh:mm:ss, Last Login dd-mmm-yy hh:mm:ss
        @ENABLE <RET>
        $
```


➡ Step 2:  Type COPY PS:<NEW-SYSTEM>*.*.* PS:<SYSTEM>*.*.* and press the
           RETURN key.

To copy the directory <NEW-SYSTEM> to <SYSTEM>, type the COPY command.
The system prints an [OK] message for each file copied.

```
$COPY PS:<NEW-SYSTEM>*.*.* PS:<SYSTEM>*.*.* <RET>
        .
        .
        .
$
```

➡️ Step 3:   Type COPY PS:<NEW-SUBSYS>*.*.* PS:<SUBSYS>*.*.* and press the
             RETURN key.

To copy the directory <NEW-SUBSYS> to <SUBSYS>, type the COPY command.
The system prints an [OK] message for each file copied.

```
$COPY PS:<NEW-SUBSYS>*.*.* PS:<SUBSYS>*.*.* <RET>
        .
        .
        .
$
```

➡️ Step 4:   Type CONNECT PS:<SYSTEM> and press the RETURN key.

Connect to the directory PS:<SYSTEM> by typing the CONNECT command.

```
$CONNECT PS:<SYSTEM> <RET>
$
```

                              NOTE

        Use an editor program to change the configuration
        command file.  You can use any editor of your choice
        as long as you accomplish the goal of each step.
        Steps 5 through 10 illustrate the use of the EDIT
        editor program to change the configuration command
        file.

➡️ Step 5:   Type EDIT 6-1-CONFIG.CMD and press the RETURN key.

To edit the 6-1-CONFIG.CMD file, type the EDIT command.

```
$EDIT 6-1-CONFIG.CMD <RET>
Edit: PS:<SYSTEM>6-1-CONFIG.CMD
*
```

➡️ Step 6:   Type P^:* and press the RETURN key.

To print the entire configuration command file, type P^:*.

```
*P^:* <RET>
      .
      .
      .
*
```

➡️ Step 7:   Type R line-number and press the RETURN key.

The parameters

```
DEFINE SYS:   PS:<NEW-SUBSYS>,PS:<SUBSYS>
DEFINE SYSTEM:   PS:<NEW-SYSTEM>,PS:<SYSTEM>
```

must be replaced by

```
DEFINE SYS:   PS:<SUBSYS>
DEFINE SYSTEM:   PS:<SYSTEM>
```

| To do this, use the EDIT command REPLACE,.or R, followed by the number
| of the line you want to replace.
|
| For example, type R and the line number where DEFINE SYS:
| PS:<NEW-SUBSYS>,PS:<SUBSYS> is located; then press the RETURN key. In
| response, the system prints the line number you entered in the R
| command and waits for you to type the replacement line. In the
| example, the parameter is located at line 500.

```
*R 500 <RET>
00500
```

**➡ Step 8:   Type DEFINE SYSTEM: PS:<SYSTEM> and press the RETURN key.**

To define SYSTEM: as PS:<SYSTEM>, type DEFINE SYSTEM:   PS:<SYSTEM> and
press the RETURN key.   Also, use the EDIT command DELETE, or D,
followed by the number of the line you want to delete, to  delete  any
line giving another definition of SYSTEM:.

```
00500 DEFINE SYSTEM: PS:<SYSTEM> <RET>
1 Lines (00500/1) deleted
*
```

**➡ Step 9:   Repeat Steps 7 and 8 for the SYSTEM: definition.**

| Repeat Steps 7 and 8 to replace
|
|      DEFINE SYSTEM:   PS:<NEW-SYSTEM>,PS:<SYSTEM>
|
| with the definition
|
|      DEFINE SYSTEM:   PS:<SYSTEM>

**➡ Step 10:   Type EU and press the RETURN key.**

When you finish making the  necessary  changes  to  the  configuration
command  file,  type  EU and press the RETURN key.  This ends the EDIT
program and saves the file.  The system prints the file name  and  the
TOPS-20 command prompt.

```
*EU <RET>
```

| ```
| [PS:<SYSTEM>6-1-CONFIG.CMD.n]
| $
| ```

**➡ Step 11:   Type CONNECT and press the RETURN key.**

Connect back to your log-in directory by typing CONNECT.

```
$CONNECT <RET>
$
```

➡Step 12:   Type DELETE PS:<NEW-SYSTEM>*.*.* and press the RETURN key.

To delete the files in the directory PS:<NEW-SYSTEM>, type the  DELETE
command.  The system prints an [OK] message for each file it deletes.

```
    $DELETE PS:<NEW-SYSTEM>*.*.* <RET>
        .
        .
        .
    $
```

➡Step 13:   Type DELETE PS:<NEW-SUBSYS>*.*.* and press the RETURN key.

To delete the files in the directory PS:<NEW-SUBSYS>, type the  DELETE
command.  The system prints an [OK] message for each file it deletes.

```
    $DELETE PS:<NEW-SUBSYS>*.*.* <RET>
        .
        .
        .
    $
```

➡Step 14:   Type ^ECEASE +00:01 and press the RETURN key.

To shut down the system in one minute, type ^ECEASE +00:01.  After the
system  prints "[Confirm]," press the RETURN key.  The system prints a
list of messages.  The last message is "Shutdown complete."

```
    $^ECEASE +00:01 <RET>
     TOPS20 Shut down scheduled for dd-mmm-yy hh:mm:ss
    [Confirm]<RET>

    [System going down in one minute!!]
    $
    [Timesharing is over]

            OPERATOR - WAIT FOR THE MESSAGE "Shutdown complete"
            BEFORE ENTERING COMMANDS TO PARSER

    Shutdown complete
```

NOTE

Do not proceed to Step  15  until  the  system  prints
"Shutdown complete."

➡Step 15:   Type <CTRL/\>.

At the console terminal, type <CTRL/\>  to  return  to  the  front-end
Command  Parser.   When  you  are at Command Parser command level, the
system prints the prompt PAR>.

```
    <CTRL/\>
    PAR>
```

➡Step 16:  Type SHUTDOWN and press the RETURN key.

   To stop the TOPS-20 monitor, type SHUTDOWN.

        PAR>SHUTDOWN <RET>
        **HALTED**

        %DECSYSTEM-20 not running


➡Step 17:  Read Chapter 5 of this guide.

| To run the Version 6.1 software from disk, follow the steps in Chapter
| 5 of this guide.

                              NOTES


|        1.  If you ever need to revert  to  Version  5.1,  you
|            must  reinstall  Version 5.1 using the Version 5.1
            floppies and tapes.

        2.  If you  are  installing  any  unbundled  software,
            perform  the  steps  specified  in the appropriate
            installation guide that accompanies each  optional
            software product.


➡Step 18:  Start timesharing.

# APPENDIX B

## POCKET INSTALLATION GUIDE FOR THE DECSYSTEM-20

| This appendix contains the console terminal output for a new
| installation of the TOPS-20 software on a DECSYSTEM-20 Model 2060.
| Step numbers are in the left column. The action for each step is
| printed in BOLD. No error recovery procedures are included in this
| appendix. If you need help, refer to the appropriate step in Chapters
| 2 through 7.

Step        Operation

1           Read the listing labeled TOPS20.BWR.

2           Ask your DIGITAL Field Service Representative if the disk
            packs are formatted.

3           Power up the system.

4           Label the disk packs.

5           Mount the disk packs.

6           Check the CONTROLLER SELECT switches on the disk drive.

7           Mount System Floppy A in drive 0.

8           Mount System Floppy B in drive 1.

9           Mount the Installation tape on MTA0:.

10          Place the front-end HALT switch in the ENABLE position.

11          Set the switch register to 000007 (octal).

12          Hold ENABLE and press the SWITCH REGISTER button.

|           RSX-20F VB15-21 12:00 13-NOV-84

            [SY0: redirected to DX0:]
            [DX0: mounted]
            [DX1: mounted]
|           KLI -- VERSION VB15-15 RUNNING
            KLI -- ENTER DIALOG [NO,YES,EXIT,BOOT]?
13          KLI>YES <RET>
            KL1 -- KL10 S/N: 2102., MODEL B, 60 HERTZ
            KL1 -- KL10 HARDWARE ENVIRONMENT:
                    MOS MASTER OSCILLATOR
                    EXTENDED ADDRESSING
                    INTERNAL CHANNELS
                    CACHE

| Step | Operation |
|------|-----------|
| | KLI -- RELOAD MICROCODE [YES,VERIFY,FIX,NO]? |
| 14 | KLI>YES KLX <RET> |
| | KLI -- MICROCODE VERSION 2.0[407] LOADED |
| | KLI -- RECONFIGURE CACHE [FILE,ALL,YES,NO]? |
| 16 | KLI>ALL <RET> |
| | KLI -- ALL CACHES ENABLED |
| | KLI -- CONFIGURE KL MEMORY [FILE,ALL,REVERSE,FORCE,YES,NO]? |
| 17 | KLI>ALL <RET> |

```
        LOGICAL MEMORY CONFIGURATION
          ADDRESS   SIZE     INT    TYPE     CONTROLLER
          00000000   76K       4    MB20        10
```

| Step | Operation |
|------|-----------|
| | KLI -- LOAD KL BOOTSTRAP [FILE,YES,NO,FILENAME]? |
| 18 | KLI>MTBOOT <RET> |
| | KLI -- WRITE CONFIGURATION FILE [YES,NO]? |
| 19 | KLI>NO <RET> |
| | KLI -- BOOTSTRAP LOADED AND STARTED |
| | |
| | BOOT V11.0(311) |
| | |
| 20 | MTBOOT>/L <RET> |
| | [BOOT: LOADING] [OK] |
| | |
| 21 | MTBOOT>/G143 <RET> |
| | |
| | [FOR ADDITIONAL INFORMATION TYPE "?" TO ANY OF THE FOLLOWING QUESTIONS.] |
| | |
| 22 | DO YOU WANT TO REPLACE THE FILE SYSTEM ON THE SYSTEM STRUCTURE? YES <RET> |
| | |
| 23 | DO YOU WANT TO DEFINE THE SYSTEM STRUCTURE? YES <RET> |
| | |
| 24 | HOW MANY PACKS ARE IN THIS STRUCTURE: 1 <RET> |
| | |
| 26 | ON WHICH "CHANNEL,CONTROLLER,UNIT" IS LOGICAL PACK # 0 MOUNTED: 1,-1,0 <RET> |
| | |
| 28 | DO YOU WANT THE DEFAULT SWAPPING SPACE? YES <RET> |
| | |
| 31 | DO YOU WANT THE DEFAULT SIZE FRONT END FILE SYSTEM? YES <RET> |
| | |
| 33 | DO YOU WANT THE DEFAULT SIZE BOOTSTRAP AREA? YES <RET> |
| | |
| 34 | WHAT IS THE NAME OF THIS STRUCTURE? PS: <RET> |
| | |
| | [STRUCTURE "PS" SUCCESSFULLY DEFINED] |
| | |
| | [PS MOUNTED] |
| | |
| | %%NO SETSPD. |
| | |
| | System restarting, wait... |
| 36 | ENTER CURRENT DATE AND TIME: 12-JUN-85 1630 <RET> |
| | |
| | YOU HAVE ENTERED WEDNESDAY, 12-JUNE-1985 4:30PM, |
| 37 | IS THIS CORRECT (Y,N) Y <RET> |

<u>Step</u>          <u>Operation</u>

38          WHY RELOAD? **NEW** <**RET**>

            <SYSTEM>ACCOUNTS-TABLE.BIN NOT FOUND — ACCOUNT VALIDATION IS
            DISABLED

            RUNNING DDMP


            NO SYSJOB

39          <**CTRL/C**>
            NO EXEC
40          MX>**GET FILE MTAØ:** <**RET**>
41          MX>**GET FILE MTAØ:** <**RET**>
42          MX>**START** <**RET**>


            TOPS-20 Command processor 6.1(273)
43          @**ENABLE** <**RET**>
44          $**RUN MTAØ:** <**RET**>
45          DLUSER>**LOAD MTAØ:** <**RET**>


            DONE.
46          DLUSER>**EXIT** <**RET**>
47          $**RUN MTAØ:** <**RET**>
48          DUMPER>**TAPE MTAØ:** <**RET**>
49          DUMPER>**RESTORE PS:<*>*.*.* PS:<SYSTEM>*.*.*** <**RET**>
            Saveset ""SYSTEM FILES FOR TOPS-20 V6.1""
             Loading files into PS:<SYSTEM>
             End of Saveset.



             Total files restored:      n
             Total pages restored:      n
50          DUMPER>**RESTORE PS:<*>*.*.* PS:<SUBSYS>*.*.*** <**RET**>
            Saveset ""SUBSYS FILES FOR TOPS-20 V6.1""
             Loading files into PS:<SUBSYS>
             End of Saveset.



             Total files restored:      n
             Total pages restored:      n
51          DUMPER>**RESTORE PS:<*>*.*.* PS:<SUBSYS>*.*.*** <**RET**>
            Saveset ""GALAXY SUBSYS FILES FOR TOPS-20 V6.1""
             Loading files into PS:<SUBSYS>
             End of Saveset.



             Total files restored:      n
             Total pages restored:      n
52          DUMPER>**RESTORE PS:<*>*.*.* PS:<UETP.LIB>*.*.*** <**RET**>
            Saveset ""UETP FILES FOR TOPS-20 V6.1""
             Loading files into PS:<UETP.LIB>
             End of Tape.



             Total files restored:      n
             Total pages restored:      n
53          DUMPER>**EXIT** <**RET**>
54          $**UNLOAD MTAØ:** <**RET**>

Step        Operation

55          $INFORMATION DISK-USAGE PS:<*> <RET>

            PS:<ROOT-DIRECTORY>
            -874 Pages assigned
            +INF Working pages, +INF Permanent pages allowed

            PS:<ACCOUNTS>
            14 Pages assigned
            +INF Working pages, +INF Permanent pages allowed

            PS:<NEW-SUBSYS>
            0 Pages assigned
            +INF Working pages, +INF Permanent pages allowed

            PS:<NEW-SYSTEM>
            0 Pages assigned
            +INF Working pages, +INF Permanent pages allowed

            PS:<OPERATOR>
            0 Pages assigned
            250 Working pages, 250 Permanent pages allowed

            PS:<SPOOL>
            0 Pages assigned
            +INF Working pages, +INF Permanent pages allowed

            PS:<SUBSYS>
            3111 Pages assigned
            +INF Working pages, +INF Permanent pages allowed

            PS:<SYSTEM>
            1624 Pages assigned
            +INF Working pages, +INF Permanent pages allowed

            PS:<SYSTEM-ERROR>
            1 Pages assigned
            +INF Working pages, +INF Permanent pages allowed

            PS:<UETP>
            0 Pages assigned
            100000 Working pages, 100000 Permanent pages allowed

            PS:<UETP.LIB>
            1632 Pages assigned
            4000 Working pages, 4000 Permanent pages allowed

            PS:<UETP.RUN>
            0 Pages assigned
            500 Working pages, 500 Permanent pages allowed

            Total of 5508 Pages assigned, in 12 directories.
            58056 Pages free on PS:, 17944 pages used.
56          $RUN PS:<SUBSYS>MAKDMP.EXE <RET>
57          MAKDMP>CREATE PS:<SYSTEM>DUMP.EXE.1 2048 <RET>
            [Dump file: <SYSTEM>DUMP.EXE.1 created]
58          MAKDMP>EXIT <RET>
59          $CONNECT PS:<SYSTEM> <RET>

| Step | Operation |
|------|-----------|

60      $COPY montyp.EXE.* MONITR.EXE.* \<RET>
        montyp.EXE.n => MONITR.EXE.n [OK]

61      $TERMINAL NO RAISE \<RET>

62      $COPY TTY: MONNAM.TXT \<RET>
        TTY: => MONNAM.TXT.1

        Installation-test System   ^Z

63      $COPY TTY: TAPNAM.TXT \<RET>
        TTY: => TAPNAM.TXT.1

        Instal-tst   ^Z
        $

> **NOTE**
>
> Steps 64 through 92 illustrate how to create the configuration command file with the EDIT editor program. You can use any editor of your choice, as long as you accomplish the goal of each step.
>
> As you create the configuration command file, use the definitions and values that are appropriate for your system. The file shown is only an example.

64      $CREATE 6-1-CONFIG.CMD \<RET>
        Input: PS:\<SYSTEM>6-1-CONFIG.CMD.1

65      00100 ! Terminal Speeds \<RET>
        00200 ! Line 1 has input=9600 and output=9600 \<RET>
        00300 TERMINAL 1 SPEED 9600 \<RET>
        00400 ! Lines 2 to 20 have input and output=2400 \<RET>
        00500 TERMINAL 2-20 SPEED 2400 \<RET>
        00600 ! Lines 23 to 40 are shut off \<RET>
        00700 TERMINAL 23-40 SPEED 0 \<RET>

66      00800 ! Lines 21 and 22 are dialup lines \<RET>
        00900 TERMINAL 21 REMOTE SPEED 9600 \<RET>
        01000 TERMINAL 22 REMOTE AUTO \<RET>

67      01100 DEFINE NEW: PS:\<NEW>,SYS: \<RET>
        01200 DEFINE OLD: PS:\<OLD>,SYS: \<RET>
        01300 DEFINE HLP: SYS: \<RET>
        01400 DEFINE SERR: PS:\<SYSTEM-ERROR> \<RET>
        01500 DEFINE DMP: PS:\<directory> \<RET>
        01600 DEFINE POBOX: PS: \<RET>

68      01700 DEFINE EDITOR: SYS:TV.EXE \<RET>

69      01800 MAGTAPE 0 24      TU45 \<RET>
        01900 MAGTAPE 1 2001    TU77 \<RET>
        02000 MAGTAPE 2 2002    TU71 \<RET>
        02100 MAGTAPE 3 2003    TU70 \<RET>
        02200 MAGTAPE 4 1500    TU72 \<RET>

70      02300 PRINTER 0 LOWERCASE VFU SYS:NORMAL.VFU \<RET>
        02400 PRINTER 1 VFU SYS:NORMAL.VFU \<RET>

71      02500 PRINTER 0 LOWERCASE RAM SYS:LP96.RAM \<RET>
        02600 PRINTER 1 RAM SYS:LP64.RAM \<RET>

72      02700 TIMEZONE 5 \<RET>

73      02800 DISABLE DIRECTORY-PARAMETER-SETTING \<RET>

74      02900 DISABLE ACCOUNT-VALIDATION \<RET>

Step        Operation

CAUTION - STEP 75

Before you can use this performance feature, you must
obtain from your DIGITAL Field Service Representative
the following information about your hardware:

1.  If you have a KL1Ø-E processor, it must be at
    revision level 3 or later.

2.  If you have board M7772, it must be at version
    level E and CS revision level F; or you may have
    board M7786.

If your hardware does not meet these requirements,
take        the       system      default:       DISABLE
FULL-LATENCY-OPTIMIZATION.

```
75          Ø3ØØØ ENABLE FULL-LATENCY-OPTIMIZATION <RET>
76          Ø31ØØ ENABLE WORKING-SET-PRELOADING <RET>
77          Ø32ØØ BIAS 6 <RET>
78          Ø33ØØ CREATE 1 .2Ø <RET>
            Ø34ØØ CREATE 2 .4Ø <RET>
            Ø35ØØ CREATE 3 .15 <RET>
79          Ø36ØØ BATCH-CLASS 4 <RET>
            Ø37ØØ CREATE 4 .25 <RET>
```

CAUTION - STEP 8Ø

Do not enter the command in Step 8Ø into the
configuration command file until you have entered the
commands in Steps 78 and 79. If you enable class
scheduling before creating classes, class scheduling
will not function properly.

```
80          Ø38ØØ ENABLE CLASS-SCHEDULING ACCOUNTS ALLOCATED <RET>
81          Ø39ØØ ARCHIVE-TAPE-RECYCLE-PERIOD 1825 <RET>
82          Ø4ØØØ TAPE-RECYCLE-PERIOD 9Ø <RET>
83          Ø41ØØ ENABLE TAPE-DRIVE-ALLOCATION <RET>
84          Ø42ØØ TAPE-RECOGNITION-ERRORS UNLOAD <RET>
85          Ø43ØØ CHANGE  9:ØØ WEEKDAYS <RET>
            Ø44ØØ CHANGE 17:ØØ WEEKDAYS <RET>
            Ø45ØØ CHANGE  Ø:ØØ SATURDAY <RET>
86          Ø46ØØ ALLOW    RPØ6    1243 <RET>
            Ø47ØØ ALLOW    RP2Ø    3327 <RET>
87          Ø48ØØ DAYLIGHT ON <RET>
88          Ø49ØØ ENABLE    HANGUP-IF-LOGGED-IN <RET>
            Ø5ØØØ ENABLE    HANGUP-IF-LOGGED-OUT <RET>
89          Ø51ØØ ENABLE SYSTEM-MESSAGE-LEVEL-Ø <RET>
            Ø52ØØ ENABLE SYSTEM-MESSAGE-LEVEL-1 <RET>
90          Ø53ØØ NODE DISNEY 8.164 <RET>
91          Ø54ØØ LAT-STATE OFF <RET>
92          Ø55ØØ $
            *EU <RET>
```

[PS:<SYSTEM>6-1-CONFIG.CMD.1]

Step     Operation

```
 93       $TYPE <SYSTEM>6-1-CONFIG.CMD <RET>
          ! Terminal Speeds
          ! Line 1 has input=9600 and output=9600
          TERMINAL 1 SPEED 9600
          ! Lines 2 to 20 have input and output=2400
          TERMINAL 2-20 SPEED 2400
          ! Lines 23 to 40 are shut off
          TERMINAL 23-40 SPEED 0
          ! Line 21 and 22 are dialup lines
          TERMINAL 21 REMOTE SPEED 300
          TERMINAL 22 REMOTE AUTO
          DEFINE NEW: PS:<NEW>,SYS:
          DEFINE OLD: PS:<OLD>,SYS:
          DEFINE HLP: SYS:
          DEFINE SERR: PS:<SYSTEM-ERROR>
          DEFINE DMP: PS:<directory>
          DEFINE POBOX: PS:
          DEFINE EDITOR: SYS:TV.EXE
          MAGTAPE 0 24 TU45
          MAGTAPE 1 2001 TU77
          MAGTAPE 2 2002 TU71
          MAGTAPE 3 2003 TU70
          MAGTAPE 4 1500 TU72
          PRINTER 0 LOWERCASE VFU SYS:NORMAL.VFU
          PRINTER 1 VFU SYS:NORMAL.VFU
          PRINTER 0 LOWERCASE RAM SYS:LP96.RAM
          PRINTER 1 RAM SYS:LP64.RAM
          TIMEZONE 5
          DISABLE DIRECTORY-PARAMETER-SETTING
          DISABLE ACCOUNT-VALIDATION
          ENABLE FULL-LATENCY-OPTIMIZATION
          ENABLE WORKING-SET-PRELOADING
          BIAS 6
          CREATE 1 .20
          CREATE 2 .40
          CREATE 3 .15
          BATCH-CLASS 4
          CREATE 4 .25
          ENABLE CLASS-SCHEDULING ACCOUNTS ALLOCATED
          ARCHIVE-TAPE-RECYCLE-PERIOD 1825
          TAPE-RECYCLE-PERIOD 90
          ENABLE TAPE-DRIVE-ALLOCATION
          TAPE-RECOGNITION-ERRORS UNLOAD
          CHANGE 9:00 WEEKDAYS
          CHANGE 17:00 WEEKDAYS
          CHANGE 0:00 SATURDAY
          ALLOW RP06 1243
          ALLOW RP20 3327
          DAYLIGHT ON
          ENABLE HANGUP-IF-LOGGED-IN
          ENABLE HANGUP-IF-LOGGED-OUT
          ENABLE SYSTEM-MESSAGE-LEVEL-0
          ENABLE SYSTEM-MESSAGE-LEVEL-1
          NODE DISNEY 8.164
          LAT-STATE OFF
 94       $BUILD PS:<OPERATOR> <RET>
          [Old]
 95       $$PASSWORD your-password <RET>
 96       $$USER-OF-GROUP 100 <RET>
 97       $$IPCF <RET>
 98       $$<RET>
```

| Step | Operation |
|------|-----------|
| 99 | $BUILD PS:<REMARKS> <RET> |
|    | [New] |
| 100 | $$<RET> |
| 101 | $CONNECT PS:<SUBSYS> <RET> |
| 102 | $CREATE LPFORM.INI <RET> |
|    | Input: PS:<SUBSYS>LPFORM.INI.1 |
| 103 | 00100 NORMAL/BANNER:2/HEADER:2/TRAILER:2 <RET> |
|    | 00200 NARROW/BANNER:2/HEADER:2/TRAILER:2/WIDTH:72 <RET> |
| 104 | 00300 $ |
|    | *EU <RET> |

```
[PS:<SUBSYS>LPFORM.INI.1]
$
```

## NOTE

Perform Steps 105 through 114 only if you are using an RP07 disk pack for your system structure. Otherwise, continue at Step 115.


## TCP/IP Installations

If you are installing TCP/IP-20 and are using an RP07 disk pack as the system structure, perform Steps 105 through 114. Otherwise, proceed to Appendix C, Section C.3, Step 2.

| Step | Operation |
|------|-----------|
| 105 | $RUN CHECKD <RET> |
| 106 | CHECKD>CREATE FESYS <RET> |
| 107 | Enter alias: FESYS <RET> |
| 108 | How many units in this structure: 1 <RET> |
| 109 | DECIMAL Channel, Controller, and Unit numbers for logical unit 0: 1,-1,0 <RET> |
| 110 | Number of pages to allocate for swapping? 7035 <RET> |
| 111 | Number of pages to allocate for the Front End File System? 950 <RET> |
| 112 | Owner name? OPERATOR <RET> |
| 113 | Is this a system structure for startup? NO <RET> |
| 114 | CHECKD>EXIT <RET> |
|    | $ |

## TCP/IP Installations

If you are installing TCP/IP-20, proceed to Appendix C, Section C.3, Step 2. Do not create the front-end file system until you complete Steps 1 through 23 in Appendix C.

| Step | Operation |
|------|-----------|
| 115 | $^ECEASE NOW <RET> |
|    | KL2102 Will be shut down IMMEDIATELY |
|    | [Confirm] <RET> |

```
[Timesharing is over]

        OPERATOR - WAIT FOR THE MESSAGE "Shutdown complete"
        BEFORE ENTERING COMMANDS TO PARSER

Shutdown complete
```

| Step | Operation |
|------|-----------|
| | 116 | Make sure that the correct floppy disks are mounted. |
| 117 | <CTRL/\> |
| 118 | PAR>SHUTDOWN <RET> |
| | **HALTED** |
| | %DECSYSTEM-20 not running |
| 119 | Set the switch register to 000003 (octal). |
| 120 | Hold ENABLE and press the SWITCH REGISTER button. |
| | RSX-20F VB15-21 12:00 13-NOV-84 |
| | [SY0: redirected to DX0:] |
| | [DX0: mounted] |
| | [DX1: mounted] |
| 121 | <CTRL/\> |
| | 123 | PAR%RUN INI <RET> |
| 124 | INI>DB0: <RET> |
| 125 | <CTRL/\> |
| | 126 | PAR%RUN MOU <RET> |
| 127 | MOU>DB0: <RET> |
| | MOU -- MOUNT COMPLETE |
| 128 | MOU>^Z |
| | <CTRL/\> |
| | 129 | PAR%RUN UFD <RET> |
| 130 | UFD>DB0:[5,5] <RET> !Wait 10 seconds before proceeding |
| 131 | <CTRL/\> |
| | 132 | PAR%RUN PIP <RET> |
| | 133 | PIP>DB0:*.*;*=DX0:*.*;*,DX1:*.*;* <RET> |
| 134 | PIP>^Z |
| | <CTRL/\> |
| | 135 | PAR%RUN RED <RET> |
| 136 | RED>DB0:=SY0: <RET> !Wait 5 seconds before proceeding |
| 137 | <CTRL/\> |
| | 138 | PAR%RUN SAV <RET> |
| | SAV> |
| 139 | Set the switch register to zero (0). |
| 140 | SAV>SY0:/WB <RET> |
| | [DB0: dismounted] |
| | [DX0: dismounted] |
| | [DX1: dismounted] |
| | RSX-20F VB15-21 12:19 13-NOV-84 |
| | [SY0: redirected to DB0:] |
| | [DB0: mounted] |
| 141 | Store the floppy disks A and B. |
| 142 | Mount System Floppy C on drive 0. |

| Step | Operation |
|------|-----------|
| 143 | <CTRL/\> |
| 144 | PAR&RUN **MOU** <RET> |
| 145 | MOU>DXØ: <RET> |
|  | MOU -- MOUNT COMPLETE |
| 146 | MOU>^Z |
|  | <CTRL/\> |
| 147 | PAR&RUN **PIP** <RET> |
| 148 | PIP>DBØ:*.*;*=DXØ:*.*;* <RET> |
| 149 | PIP>DBØ:/LI <RET> |

```
DIRECTORY DBØ:[5,5]
13-NOV-84 12:17

F11ACP.TSK;1521      77.      C   13-NOV-84 12:04
TKTN.TSK;1521        6.       C   13-NOV-84 12:04
MOU.TSK;1521         5.       C   13-NOV-84 12:04
KLX.MCB;400          55.          13-NOV-84 12:05
HALT.CMD;1           5.           13-NOV-84 12:05
BOOT.EXB;11306       46.          13-NOV-84 12:05
BF16N1.All;1         1.           13-NOV-84 12:05
BF64N1.All;1         1.           13-NOV-84 12:05
SBØ.CMD;1            2.           13-NOV-84 12:05
SB1.CMD;1            2.           13-NOV-84 12:06
CLOCK.CMD;1          1.           13-NOV-84 12:06
EBUS.CMD;1           1.           13-NOV-84 12:06
DEX.CMD;1            2.           13-NOV-84 12:06
KPALV.CMD;1          1.           13-NOV-84 12:06
TIMEO.CMD;1          1.           13-NOV-84 12:06
FMPAR.CMD;1          1.           13-NOV-84 12:06
CRAM.CMD;1           1.           13-NOV-84 12:07
DRAM.CMD;1           1.           13-NOV-84 12:07
MTBOOT.EXB;11306     40.          13-NOV-84 12:07
LOOP.CMD;1           1.           13-NOV-84 12:07
PARSER.TSK;705       71.      C   13-NOV-84 12:07
KLDISC.TSK;1521      5.       C   13-NOV-84 12:08
KLRING.TSK;1521      6.       C   13-NOV-84 12:08
LOGXFR.TSK;1521      10.      C   13-NOV-84 12:08
MIDNIT.TXK;1521      4.       C   13-NOV-84 12:08
SETSPD.TSK;1521      5.       C   13-NOV-84 12:08
KLI.TSK;1515         73.      C   13-NOV-84 12:08
T20ACP.TSK;1521      8.       C   13-NOV-84 12:09
BOO.TSK;1521         19.      C   13-NOV-84 12:09
COP.TSK;1521         8.       C   13-NOV-84 12:09
DMO.TSK;1521         5.       C   13-NOV-84 12:09
INI.TSK;1521         23.      C   13-NOV-84 12:09
PIP.TSK;1521         56.      C   13-NOV-84 12:09
RED.TSK;1521         6.       C   13-NOV-84 12:10
SAV.TSK;1521         23.      C   13-NOV-84 12:10
UFD.TSK;1521         9.       C   13-NOV-84 12:10
ZAP.TSK;1521         38.      C   13-NOV-84 12:10
RSX20F.SYS;1521      59.      C   13-NOV-84 12:10
RSX20F.MAP;1521      154.         13-NOV-84 12:16
RP2DBT.EXB;11306     69.          13-NOV-84 12:16
RP2MBT.EXB;11306     60.          13-NOV-84 12:16

         TOTAL OF 961. BLOCKS IN 41. FILES
```

| Step | Operation |
|------|-----------|
| 150 | PIP>^Z |

<CTRL/\>
| 151 | PAR%RUN DMO <RET> |
| 152 | DMO>DX0: <RET> |
| | DMO -- DISMOUNT COMPLETE |
| 153 | DMO>^Z |

<CTRL/\>
PAR%

| 154 | Store floppy C. |

## RP20 Disks

If you have an RP20 disk subsystem, perform Steps 156 through 159.  Otherwise, continue at Step 160.

## RP20 Disk Controller

It is necessary that the 8000-2 controller for the RP20 disk subsystem be in 370 mode.  Refer to the 8000 Controller Maintenance Reference Manual, Volume 2, page U210, for information on switch settings.

| 155 | Be sure that the central processor is stopped. |
| 156 | PAR%RUN PIP <RET> |
| 157 | PIP>DB0:[5,5]BOOT.EXB=DB0:[5,5]RP2DBT.EXB <RET> |
| 158 | PIP>DB0:[5,5]MTBOOT.EXB=DB0:[5,5]RP2MBT.EXB <RET> |
| 159 | PIP>^Z |

<CTRL/\>
PAR%

| 160 | Be sure that the central processor is stopped. |
| 161 | Hold ENABLE and press the DISK button. |

RSX-20F VB15-21 12:19 13-NOV-84

[SY0: redirected to DB0:]
[DB0: mounted]
KLI -- VERSION VB15-15 RUNNING
KLI -- KL10 S/N: 2102., MODEL B, 60 HERTZ
KLI -- KL10 HARDWARE ENVIRONMENT:
          MOS MASTER OSCILLATOR
          EXTENDED ADDRESSING
          INTERNAL CHANNELS
          CACHE

KLI -- MICROCODE VERSION 2.0[407] LOADED
KLI -- % NO FILE - ALL CACHE BEING CONFIGURED
KLI -- ALL CACHES ENABLED
KLI -- % NO FILE - ALL MEMORY BEING CONFIGURED

Step        Operation

            LOGICAL MEMORY CONFIGURATION.
              ADDRESS   SIZE   INT   TYPE CONTROLLER
              00000000  768K    4    MF20  10

|           KLI -- % NO FILE - LOADING BOOTSTRAP
            KLI -- CONFIGURATION FILE WRITTEN
            KLI -- BOOTSTRAP LOADED AND STARTED

|           BOOT V11.0(311)
●           [BOOT: LOADING] [OK]


            [PS MOUNTED]
|
|           [IPALOD: LOADING CI20 MICROCODE 1.00(705)] [OK]

            System restarting, wait...
    162     ENTER CURRENT DATE AND TIME: 12-JUN-85 1112 <RET>

            YOU HAVE ENTERED WEDNESDAY, 12-JUN-85 11:12AM,
    163       IS THIS CORRECT (Y,N) Y <RET>
    164     WHY RELOAD? SC <RET>

            <SYSTEM>ACCOUNTS-TABLE.BIN NOT FOUND - ACCOUNT VALIDATION
            IS DISABLED

    165     RUN CHECKD? N <RET>

            RUNNING DDMP


|           SYSJOB 6A(20) STARTED AT 12-JUN-85 1112
|           [KNILDR: LOADING MICROCODE VERSION 1(162) INTO ETHERNET
|           CHANNEL 0]

            *****
|           12-JUN-85 11:12:39 - TGHA 4(0) IN OPERATION.
            *****
            RUN SYS:INFO
            RUN SYS:MAPPER
            RUN SYS:ORION
            RUN SYS:QUASAR
            RUN SYS:MOUNTR
            RUN SYS:MAILER
            RUN SYS:LPTSPL
|           RUN SYS:LPTSPL
            RUN SYS:CDRIVE
            RUN SYS:SPRINT
            JOB 0 /LOG OPERATOR XX OPERATOR
            ENA
            ^ESET LOGIN PSEUDO
            ^ESET LOGIN CONSOLE
            ^ESET OPERATOR
            PTYCON
|           GET SYSTEM:6-1-PTYCON.ATO
            /
            JOB 1 /LOG OPERATOR XX OPERATOR
            ENA
            GET SYS:BATCON
            /
            SJ  0: @LOG OPERATOR OPERATOR
            SJ  1: @LOG OPERATOR OPERATOR

| Step | Operation |
|------|-----------|
| &#124; | SJ 0: Job 1 on TTY206 dd-mmm-yy hh:mm:ss, Last Login never |
| &#124; | SJ 1: Job 1 on TTY206 dd-mmm-yy hh:mm:ss, Last Login never |
|  | SJ 0: @ENA |
|  | SJ 1: @ENA |
|  | SJ 1: $GET SYS:BATCON |
|  | SJ 0: $^ESET LOGIN PSEUDO |
|  | SJ 0: $^ESET LOGIN CONSOLE |
|  | SJ 0: $^ESET OPERATOR |
|  | SJ 0: $PTYCON |
| &#124; | SJ 0: PTYCON> GET SYSTEM:6-1-PTYCON.ATO |
|  | SJ 0: PTYCON> SILENCE |

<pre>
|          [From OPERATOR on line 210 to all:    SYSTEM IN OPERATION]
●         SJ   0:  PTYCON> W ALL
          SJ   0:  OPR(0)     3         OPERATOR     OPR      TI      0:0:1
          SJ   0:  PTYCON> CONN OPR
          SJ   0:  [CONNECTED TO SUBJOB OPR(0)]
   166    <CTRL/C>
|          Installation-test System, TOPS-20 Monitor 6.1(6763)
|  167    @LOGIN OPERATOR your-password <RET>
|          Job 4 on TTY5 dd-mmm-yy hh:mm:ss, Last Login dd-mmm-yy
|         hh:mm:ss
|         @ENABLE <RET>
|  168    $OPR <RET>
   169    OPR>SHOW STATUS TAPE-DRIVE /ALL <RET>
          OPR>
          15:58:35            --Tape Drive Status--

          Drive    State    Volid    Req#    Job#    User
          -----    -----    ------   ----    ----    ----
          MTA0:    Unloaded
                   AVR: Yes
          MTA1:    In Use   DEK      31      45      LARRUP
                   AVR: Yes, Write: Yes, Unlabeled
          MTA2:    Loaded
                   AVR: Yes, Write: Yes, Unlabeled
          MTA3:    Unloaded
                   AVR: Yes
   170    OPR>SET TAPE-DRIVE MTA0: UNAVAILABLE <RET>
          Enter text and terminate with ^Z
   171    INSTALLING OPTIONAL SOFTWARE ^Z
|         OPR>
|         15:59:07             -- Tape Drive Set Unavailable --
|                         MTA0: set unavailable for assignment by MOUNTR
|         SJ  0:
|         SJ  0: 15:59:07     -- Tape Drive Set Unavailable --
|         SJ  0:          MTA0: set unavailable for assignment by MOUNTR
|  172    OPR>EXIT <RET>
   173    $ASSIGN MTA0: <RET>
●  174    $DUMPER <RET>
   175    DUMPER>TAPE MTA0: <RET>
          DUMPER>

   176    Mount the software tape.
</pre>

| Step | Operation |
|------|-----------|
| 177 | DUMPER>REWIND <RET> |
| 178 | DUMPER>RESTORE PS:<*>*.*.* PS:<OPERATOR>*.*.* <RET> |

```
DUMPER TAPE # 1, ""DOCUMENTATION FILES FOR TOPS-20 V6.1""
 Loading files into PS:<OPERATOR>
 End of Saveset.


 Total files restored:      n
 Total pages restored:      n
```

| 179 | DUMPER>RESTORE PS:<*>*.*.* PS:<SUBSYS>*.*.* <RET> |

```
DUMPER TAPE # 1, ""SOURCE FILES FOR TOPS-20 V6.1""
 Loading files into PS:<SUBSYS>
 End of Saveset.


 Total files restored:      n
 Total pages restored:      n
DUMPER>
```

| 180 | Restore the language sources (optional). |
| 181 | Restore the GALAXY sources (optional). |
| 182 | DUMPER>EXIT <RET> |
| 183 | $UNLOAD MTA0: <RET> |
| | $ |
| 184 | Dismount the software tape and store it. |
| 185 | Return to Step 176 to restore files from other tapes (optional). |
| 186 | $DEASSIGN MTA0: <RET> |
| | $ |

## NOTE

If you performed Steps 166 through 186, you can skip
Steps 188 and 189 and start at Step 190.

| 188 | <CTRL/C> |

```
Installation-test System, TOPS-20 Monitor 6.1(6763)
```

| 189 | @LOGIN OPERATOR your-password <RET> |

```
Job n on TTYn dd-mmm-yy hh:mm:ss, Last Login dd-mmm-yy
hh:mm:ss
@ENABLE <RET>
```

| 190 | $TAKE PS:<UETP.LIB>SET-UP.CMD <RET> |

```
[New]
[New]
   .
   .
   .
End of <UETP.LIB>SET-UP.CMD.1
```

| 191 | $CONNECT PS:<UETP.RUN> <RET> |
| 192 | $RUN UETP.EXE <RET> |

```
[dd-mmm-yy hh:mm:ss             User Environment Test Package ]
```

| 193 | UETP>TAKE VERIFY.CMD <RET> |

```
UETP>ENABLE VERIFY/CYCLE:1 !Verify that the correct software
[hh:mm:ss   ENABLE COMPLETED]
```

Step        Operation

|              UETP>BEGIN                         ! is installed
|              [hh:mm:ss   BEGIN COMPLETED]
|
|              UETP>DEFAULT/CYCLE:00:15
|              [hh:mm:ss   DEFAULT COMPLETED]

              UETP>ENABLE RANCBL
              [hh:mm:ss   ENABLE COMPLETED]

              UETP>ENABLE RANFOR
              [hh:mm:ss   ENABLE COMPLETED]

              UETP>ENABLE MTA0
              [hh:mm:ss   ENABLE COMPLETED]

              UETP>STATUS

              [dd-mmm-yy hh:mm:ss]

| Test name | Depth | Status | Cycle | Times run | Error count | Error limit | Start time |
|---|---|---|---|---|---|---|---|
| VERIFY | VER | Running | 1 | 0 | 0 | 0 | dd-mmm-yy hh:mm:ss |
| RANCBL | VER | Enabled | 0:15 | 0 | 0 | 0 | |
| RANFOR | VER | Enabled | 0:15 | 0 | 0 | 0 | |
| MTA0 | VER | Enabled | 0:15 | 0 | 0 | 0 | |

|              START VERIFY     9:43:33
|              END   VERIFY    10:14:53
|
|                               NOTE
|
|              If any messages appear between the START  message  and
|              the  END  message,  there  are errors in the files you
|              received.  Do not proceed any further.

194           Mount a magnetic tape on the drive you want to test.

              UETP>ENABLE MTAn <RET>
              [hh:mm:ss   ENABLE COMPLETED]

195           UETP>BEGIN <RET>
              [hh:mm:ss   BEGIN COMPLETED]

|              UETP>
|
|                   START   RANCBL   hh:mm:ss
|                   START   RANFOR   hh:mm:ss
|                   START   MTA0     hh:mm:ss
|                   END     RANCBL   hh:mm:ss
|                   END     RANFOR   hh:mm:ss
|                   END     MTA0     hh:mm:ss

| Step | Operation |
|------|-----------|

196      [All tests complete on processor # 2102]

          [dd-mmm-yy hh:mm:ss]

| Test name | Depth | Status | Cycle | Times run | Error count | Error limit | Start time |
|------|------|------|------|------|------|------|------|
| VERIFY | VER | Ended | 1 | 1 | 0 | 0 | dd-mmm-yy hh:mm:ss |
| RANCBL | VER | Ended | 0:15 | 1 | 0 | 0 | dd-mmm-yy hh:mm:ss |
| RANFOR | VER | Ended | 0:15 | 1 | 0 | 0 | dd-mmm-yy hh:mm:ss |
| MTA0 | VER | Ended | 0:15 | 1 | 0 | 0 | dd-mmm-yy hh:mm:ss |

197      Proceed to Step 202 to EXIT from UETP.  If you want to test optional software, proceed to Step 199.

199      UETP>**ENABLE product-name <RET>**
          [hh:mm:ss  ENABLE COMPLETED]

          UETP>**ENABLE product-name <RET>**
          [hh:mm:ss  ENABLE COMPLETED]
                  .
                  .
                  .

          UETP>**BEGIN <RET>**
          [hh:mm:ss  BEGIN COMPLETED]

          UETP>

200      **STATUS <RET>**

          [dd-mmm-yy hh:mm:ss]

| Test name | Depth | Status | Cycle | Times run | Error count | Error limit | Start time |
|------|------|------|------|------|------|------|------|
| VERIFY | VER | Ended | 1 | 1 | 0 | 0 | dd-mmm-yy hh:mm:ss |
| RANCBL | VER | Running | 0:15 | 0 | 0 | 0 | dd-mmm-yy hh:mm:ss |
| RANFOR | VER | Queued | 0:15 | 0 | 0 | 0 | dd-mmm-yy hh:mm:ss |
| MTA0 | VER | Queued | 0:15 | 0 | 0 | 0 | dd-mmm-yy hh:mm:ss |

<div align="center">NOTE</div>

If there is a number other than 0  under  the  heading ERROR  COUNT, print the ERROS.LOG file, when the tests are completed, to find out what caused the error.

201      **STATUS <RET>**

          [dd-mmm-yy hh:mm:ss]

| Test name | Depth | Status | Cycle | Times run | Error count | Error limit | Start time |
|------|------|------|------|------|------|------|------|
| VERIFY | VER | Ended | 1 | 1 | 0 | 0 | dd-mmm-yy hh:mm:ss |
| RANCBL | VER | Ended | 0:15 | 1 | 0 | 0 | dd-mmm-yy hh:mm:ss |
| RANFOR | VER | Ended | 0:15 | 1 | 0 | 0 | dd-mmm-yy hh:mm:ss |
| MTA0 | VER | Ended | 0:15 | 1 | 0 | 0 | dd-mmm-yy hh:mm:ss |

202      **EXIT <RET>**

| Step | Operation |
|---|---|

203    $TAKE <UETP.LIB>CLEAN-UP.CMD <RET>
       [Old]
       [Old]
          .
          .
          .
       End of <UETP.LIB>CLEAN-UP.CMD.3
204    $DEASSIGN MTAØ: <RET>
205    $OPR <RET>
       OPR>
206    OPR>SET TAPE-DRIVE MTAØ: AVAILABLE <RET>
       OPR>
       hh:mm:ss            -- Tape Drive Set Available --
                    MTAØ: set available for assignment by MOUNTR
       SJ  Ø: OPR>
       SJ  Ø: hh:mm:ss       -- Tape Drive Set Available --
       SJ  Ø:        MTAØ: set available for assignment by MOUNTR
       OPR>
207    OPR>EXIT <RET>
       $

208    Start timesharing.

# APPENDIX C

## INSTALLING TCP/IP-20

Perform the steps in this appendix ONLY if you are using the TCP/IP (Transmission Control Protocol/Internet Protocol) network software supported by DIGITAL. Most of the configuration information required to utilize the TCP/IP software is available from the ARPANET Network Information Center (NIC) and the ARPANET Network Operations Center (NOC). Sites that are not connected to the ARPANET networks must develop their own configuration information. Follow this appendix to

1. Install the monitor and associated software.

2. Customize the data files.

3. Utilize the customized data files.

## C.1  TCP/IP INSTALLATION TOOLS

You need software packages QT023 and QT090 to install TOPS-20 and TCP/IP software on a DECSYSTEM-20. These packages contain

- The TOPS-20 RSX-20F Version 15-21 System Floppy A.

- The TOPS-20 RSX-20F Version 15-21 System Floppy B.

- The TOPS-20 RSX-20F Version 15-21 System Floppy C.

- The TOPS-20 Version 6.1 Installation tape.

- The TOPS-20 Version 6.1 Distribution tape.

- The TCP/IP-20 Version 4.0 Distribution tape.

Refer to Chapter 1 of this guide for information about the floppy disks and the TOPS-20 Installation and Distribution tapes.

The TCP/IP-20 Version 4.0 Distribution tape contains four DUMPER savesets recorded at 1600 bpi in DUMPER format.

- Saveset 1 contains documents about the TCP/IP software.

- Savesets 2 through 4 contain the TCP/IP monitors, data and source files, and utilities and tools.

## C.2  RESTORING THE TOPS-20 BUNDLED SOFTWARE FROM TAPE

Perform Step 1 to restore the TOPS-20 software.

**➡Step 1:** <u>Create the TOPS-20 file system and the configuration command
file.</u>

You will be restoring a non-TCP/IP monitor as you create the file
system and the configuration command file. Near the end of the TCP/IP
installation, you will choose a TCP/IP monitor.

If you are doing a **new installation**, read chapters 1 through 3 to
restore the Version 6.1 files from tape and create the configuration
command file.

If you are doing an **update installation**, read Appendix A, Sections A.1
through A.2.6, Steps 1 through 47, to restore the Version 6.1 files
and edit the configuration command file.


C.3  RESTORING THE TCP/IP DISTRIBUTION TAPE

To restore the TCP/IP-20 Version 4.0 Distribution tape, you need the
following disk space:

- 75 pages in the directory <OPERATOR>.

- 2000 pages in the directory <SYSTEM> or <NEW-SYSTEM>.

- 150 pages in the directory <SUBSYS> or <NEW-SUBSYS>.

- 1500 pages in the directory <TCPIP-SOURCES>, a directory you
  must create.

Use the command INFORMATION DIRECTORY dev:<directory> to determine how
many free pages there are in each directory. If necessary, move some
files to other directories or delete and expunge some files.

Follow Steps 2 through 14 to restore the TCP/IP Distribution tape.


**➡Step 2:** <u>Type BUILD PS:<TCPIP-SOURCES> and press the RETURN key.</u>

In order to restore the fourth saveset on the TCP/IP Distribution
tape, you must BUILD the directory PS:<TCPIP-SOURCES>. Follow the
example to do so.

```
$BUILD PS:<TCPIP-SOURCES> <RET>
[New]
$$WORKING 1500 <RET>
$$PERMANENT 1500 <RET>
$$<RET>
$
```


**➡Step 3:** <u>Type DUMPER and press the RETURN key.</u>

Type DUMPER to start the DUMPER program.

```
$DUMPER <RET>
DUMPER>
```

➡ Step 4:  Type TAPE MTAn:  and press the RETURN key.

To tell DUMPER which tape drive you are using, type TAPE MTAn:. The
example uses MTA0:  as the tape drive.

```
    DUMPER>TAPE MTA0: <RET>
    DUMPER>
```

➡ Step 5:  Mount the TCP/IP Distribution tape.

Mount the TCP/IP Distribution tape on the tape drive. Be sure to  put
the drive online.

➡ Step 6:  Type REWIND and press the RETURN key.

To be sure that the tape is at its beginning, type REWIND.

```
    DUMPER>REWIND <RET>
    DUMPER>
```

➡ Step 7:  Type SUPERSEDE ALWAYS and press the RETURN key.

Type the command SUPERSEDE ALWAYS to tell DUMPER to supersede  a  disk
file with a magnetic tape file of the same file name and type.

```
    DUMPER>SUPERSEDE ALWAYS <RET>
    DUMPER>
```

                              NOTE

        Give the DUMPER command FILES just before the  RESTORE
        command  if  you  want  the  system  to print the file
        specification of  each  file  it  restores.  To  stop
        printing  each  file specifications, give the NO FILES
        command after the current RESTORE command finishes.

➡ Step 8:  Type RESTORE PS:<*>*.*.*  PS:<OPERATOR>*.*.*  and  press  the
           RETURN key.

Type the RESTORE command to restore the  documentation  files  to  the
directory <OPERATOR>.

```
    DUMPER>RESTORE PS:<*>*.*.* PS:<OPERATOR>*.*.* <RET>
    Saveset ""DOCUMENTATION FOR TCP/IP-20 V4.0""
     Loading files into PS:<OPERATOR>
     End of Saveset.


     Total files restored:     n
     Total pages restored:     n
    DUMPER>
```

➡ Step 9:  Type  RESTORE   PS:<*>*.*.*   PS:<SYSTEM>*.*.*  and  press  the
           RETURN key.

Type the RESTORE command to restore  the  monitor,  data,  and  system
files  to  the  directory  <SYSTEM>.  If  you  are  doing  an  update
installation, restore the files to <NEW-SYSTEM>.

```
DUMPER>RESTORE PS:<*>*.*.* PS:<SYSTEM>*.*.* <RET>
Saveset ""SYSTEM FILES FOR TCP/IP-20 V4.0""
 Loading files into PS:<SYSTEM>
 End of Saveset.


 Total files restored:    n
 Total pages restored:    n
DUMPER>
```

➡ Step 10:  Type RESTORE  PS:<*>*.*.*  PS:<SUBSYS>*.*.*  and  press  the RETURN key.

Restore the system files to the directory <SUBSYS>.  If you are  doing an update installation, restore the files to <NEW-SUBSYS>.

```
DUMPER>RESTORE PS:<*>*.*.* PS:<SUBSYS>*.*.* <RET>
Saveset ""SUBSYS FILES FOR TCP/IP-20 V4.0""
 Loading files into PS:<SUBSYS>
 End of Saveset.


 Total files restored:    n
 Total pages restored:    n
DUMPER>
```

➡ Step 11:  Type RESTORE PS:<*>*.*.* PS:<TCPIP-SOURCES>*.*.*  and  press the RETURN key.

Restore  the  utilities  and  tools  files  to  the  directory <TCPIP-SOURCES>.

```
DUMPER>RESTORE PS:<*>*.*.* PS:<TCPIP-SOURCES>*.*.* <RET>
Saveset ""SOURCE FILES FOR TCP/IP-20 V4.0 UTILITIES AND TOOLS""
 Loading files into PS:<TCPIP-SOURCES>
 End of Saveset.


 Total files restored:    n
 Total pages restored:    n
DUMPER>
```

➡ Step 12:  Type EXIT and press the RETURN key.

Type EXIT to end the DUMPER program.

```
DUMPER>EXIT <RET>
$
```

➡ Step 13:  Type UNLOAD MTAn: and press the RETURN key.

To unload the tape from the tape drive, type UNLOAD MTAn:.

```
$UNLOAD MTA0: <RET>
$
```

➡ Step 14:  Dismount the TCP/IP Distribution tape.

You can now remove the tape from the tape drive.

## C.4   CUSTOMIZING A DATA FILE

Follow Steps 15 through 18 to customize the file INTERNET.ADDRESS (formerly SITE-ADDRESS.TXT).

**➡ Step 15:   Type CONNECT PS:<SYSTEM> and press the RETURN key.**

To provide the TCP/IP software with the data it needs to run, you must add or change three system files that reside in <SYSTEM>.  You must be connected to the appropriate directory to do so.

```
$CONNECT PS:<SYSTEM> <RET>
$
```

                              NOTE

        The following steps create a file with the EDIT editor
        program.  You can use any editor you wish, as long as
        you accomplish the goal of each step.

**➡ Step 16:   Type CREATE INTERNET.ADDRESS and press the RETURN key.**

The INTERNET.ADDRESS file should contain the addresses of your TOPS-20 system for each defined interface.  TOPS-20 supports three interfaces:

- AN20

- KLNI (the Ethernet or NI, Network Interconnect)

- KLIPA (the CI, Computer Interconnect)

Use the CREATE command to create the file INTERNET.ADDRESS.

```
$CREATE INTERNET.ADDRESS <RET>
Input: PS:<SYSTEM>INTERNET.ADDRESS.1
00100
```

**➡ Step 17:   Enter the internet addresses for your site.**

You must be sure that your INTERNET.ADDRESS file contains the correct network and host numbers.  Contact the NIC or the NOC for assistance in determining your network addresses.

Here is an example of what you should place in your INTERNET.ADDRESS file:

```
AN20#0, 10 0 0 79,NCP,PACKET-SIZE:1004,DEFAULT,PREFERRED
IPNI#0,192 5 6 1,PACKET-SIZE:1500
IPCI#0,192 5 5 4,PACKET-SIZE:632
```

The PACKET-SIZE keyword specifies the maximum size packet (in bytes) that can be transmitted over the interface.

The DEFAULT keyword specifies which internet address to use when communicating with a target host that is not on a directly connected network.

The PREFERRED keyword specifies which interface is preferred when a target host is on more than one directly connected network.

Obtain the correct network and host numbers from the NIC.  Use the packet-size in the example.  You should not have to change any parameters in the example, except the network address, as all of the parameters are set for optimum network accessibility.

Use the line starting with AN20#0 if you are connecting to the ARPANET.

Use the line with IPNI#0 if you are connecting to the Ethernet (NI).

Use the line with IPCI#0 if you are connecting to the CI.

Enter the internet addresses that are appropriate for your site into the file.

```
00100 AN20#0, 10 0 0 79,NCP,PACKET-SIZE:1004,DEFAULT,PREFERRED <RET>
00200 IPNI#0,192 5 6 1,PACKET-SIZE:1500 <RET>
00300 IPCI#0,192 5 5 4,PACKET-SIZE:632 <RET>
00400
```

➡ Step 18:  Press the ESCAPE key.  Type EU and press the RETURN key.

To save your INTERNET.ADDRESS file, press the ESCAPE key.  Then type EU and press the RETURN key.

```
00400  $
*EU <RET>

[PS:<SYSTEM>INTERNET.ADDRESS.1]
$
```

## C.5  CHOOSING A MONITOR

At this time, you are running a TOPS-20 monitor, either 2060-MONBIG.EXE or 2060-MONMAX.EXE.  You should now select a TCP/IP monitor that most closely meets your system's requirements.

The three TCP/IP monitors you can choose from are in <SYSTEM> (for new installations) or in <NEW-SYSTEM> (for update installations).

AN-MONBIG.EXE          A big TCP/IP timesharing monitor without DECnet
                       support.  This monitor supports:

```
                        100 jobs
                        128 lines
                         10 LAT lines
                         30 pseudo-terminals
                         40 NVTs (Network Virtual Terminals)
                       4MEG of memory
                          8 magnetic tape drives
                          2 line printers
                          1 card reader
                        120 million words of disk storage (six RP04,
                            three RP06, one RP07, three RP20 spindles,
                            two RA60, or one RA81) per structure
                      10000 pages for swapping space
```

AN-MONDCN.EXE     A large TCP/IP timesharing monitor with DECnet
                  support.  This monitor supports:

                       80 jobs
                      128 lines
                       40 LAT lines
                       50 pseudo-terminals
                       40 NVTs
                     4MEG of memory
                        8 magnetic tape drives
                        2 line printers
                        1 card reader
                      120 million words of disk storage (six RP04,
                          three RP06, one RP07, three RP20 spindles,
                          two RA60, or one RA81) per structure
                    15000 pages for swapping space


AN-MONMAX.EXE     The largest TCP/IP timesharing monitor without
                  DECnet support.  This monitor supports:

                      128 jobs
                      128 lines
                       10 LAT lines
                       50 pseudo-terminals
                       40 NVTs
                     4MEG of memory
                        8 magnetic tape drives
                        2 line printers
                        1 card reader
                      120 million words of disk storage (six RP04,
                          three RP06, one RP07, three RP20 spindles,
                          two RA60, or one RA81) per structure
                    15000 pages for swapping space


In Steps 19 and 20, you choose the TCP/IP monitor most appropriate for
your needs and copy it to the file PS:<SYSTEM>MONITR.EXE.


➡ Step 19:  Type CONNECT PS:<SYSTEM> and press the RETURN key.

Connect to the directory PS:<SYSTEM> by typing the CONNECT command.

    $CONNECT PS:<SYSTEM> <RET>
    $


➡ Step 20A:  Type COPY montyp.EXE.* MONITR.EXE.* and press the RETURN
             key (new installation).

➡ Step 20B:  Type COPY PS:<NEW-SYSTEM>montyp.EXE.* MONITR.EXE.* and
             press the RETURN key (update installation).

Use the COPY command for either a new installation or an update
installation to copy the monitor that you have selected to the file
MONITR.EXE.  "Montyp" designates the type of monitor you have selected
for your system.  When the copy is successfully completed, the system
prints an OK message.

The different monitors are AN-MONBIG.EXE, AN-MONDCN.EXE, and
AN-MONMAX.EXE.

```
$COPY montyp.EXE.* MONITR.EXE.* <RET>    !New installation
montyp.EXE.1 => MONITR.EXE.1 [Superseding] [OK]
$
```

## C.6  CHANGING THE SYSTEM NAME

Whenever a user types <CTRL/C> before logging in or gives the
INFORMATION VERSION command, the system prints a message similar to:

    TOPS-20 BIG SYSTEM, TOPS-20 Monitor n.n(nnnn)

where n.n(nnnn) is the version and edit number of the operating
system.  You can change the system name "TOPS-20 BIG SYSTEM" by
entering the name you want into the file PS:<SYSTEM>MONNAM.TXT.  If
the name contains lowercase letters, give the command TERMINAL NO
RAISE before entering the name.

The text of the system name can contain up to 105 characters.  For
practical purposes, it should not exceed 32 characters to fit on a
single 72-character line of terminal output.  Steps 21 through 23 show
how to change the system name to "TCP/IP Installation System" and how
to change the new system name to the abbreviated name "TCP/IP-Sys."


**➡ Step 21:  Type TERMINAL NO RAISE and press the RETURN key (optional).**

If you want lowercase letters in the system name, type the TERMINAL
command.  Make sure that the CAPS LOCKED button on the terminal is not
depressed.

```
$TERMINAL NO RAISE <RET>
$
```


**➡ Step 22:  Type COPY TTY: MONNAM.TXT and press the RETURN key.  Then
            enter the system name and type <CTRL/Z>.**

Change the system name by entering the name you want into the file
PS:<SYSTEM>MONNAM.TXT.  The system name should not exceed 32
characters.

Use the COPY command to give the system a new system name.  After you
enter the command, the system waits for you to type the new name of
your system.  After you enter the new system name, type <CTRL/Z>.  In
the example, the new system name is TCP/IP Installation System.

```
$COPY TTY: MONNAM.TXT <RET>
 TTY: = MONNAM.TXT.1

TCP/IP Installation System  ^Z
$
```

You can change this file at any time, but the system reads the system
name only when the monitor is started (whenever you boot the system).

➡ Step 23:  Type COPY TTY:  TAPNAM.TXT and press the RETURN key.  Enter
            the abbreviated system name and type <CTRL/Z>.

You should also change the system name that will  be  written  on  the
volume  header  label  of any tape initialized by users of the system.
Do  this  by  entering  the  name  you  want  into  the  file
PS:<SYSTEM>TAPNAM.TXT.   This  system  name  must contain ten or fewer
characters, so you will probably have to abbreviate the name given  in
the  previous  step.   The example shows how to change the system name
(that appears on tape labels written by the system) to "TCP/IP-Sys."

Give the system an abbreviated name with the COPY command.  After  you
enter  the  command,  the system waits for you to type the abbreviated
system name.  After  you  enter  the  abbreviated  system  name,  type
<CTRL/Z>.  In the example, the abbreviated system name is TCP/IP-Sys.

        $COPY TTY: TAPNAM.TXT <RET>
        TTY: = TAPNAM.TXT.1

        TCP/IP-Sys  ^Z
        $


C.7  COMPLETING YOUR TCP/IP INSTALLATION

Complete your installation by performing Steps 24 through 30.


➡ Step 24:  Shut down your system and bring it back up again.

Shutting down your system and bringing it back up again will  use  the
TOPS-20  Version  6.1  and  TCP/IP-20  Version  4.0  software  and the
INTERNET.ADDRESS file you created.

As you bring up the system, the system output will  differ  from  that
shown  in  Chapters  4  and 5 or Appendix A, Sections A.2.7 and A.2.8.
Your system output will contain messages about  the  loading  of  host
names and different internet networks coming online.

If you are performing  a  new  installation,  proceed  to  Chapter  4,
Creating  the  Front-End  File  system,  and  Chapter  5, Starting the
System, to complete the software installation and to shut your  system
down and bring it back up again.

If you are performing an update installation, proceed to  Appendix  A,
Updating the DECSYSTEM-20 Software, Sections A.2.7 and A.2.8, Steps 48
through 63, to complete the software installation  and  to  shut  your
system down and bring it back up again.


➡ Step 25:  Log in and enable  your  capabilities.   Then  type  CONNECT
            PS:<SYSTEM> and press the RETURN key.

Follow the example to log in, enable your capabilities, and connect to
the appropriate directory.

        TCP/IP Installation System, TOPS-20 Monitor 6.1(6763)
        @LOGIN OPERATOR your-password <RET>
        Job 5 on TTY8 dd-mmm-yy hh:mm:ss, Last Login dd-mmm-yy hh:mm:ss
        @ENABLE <RET>
        $CONNECT PS:<SYSTEM> <RET>
        $

**➡ Step 26:   Type TDIRECTORY HOSTS.TXT and press the RETURN key.**

The file named HOSTS.TXT is in your SYSTEM: area. (SYSTEM: is usually defined as PS:<NEW-SYSTEM>,PS:<SYSTEM>.) As an ARPANET customer, you will have access to a new copy of this file approximately every two weeks, when it is updated by the ARPA Network Information Center (NIC). Use each new copy when you retrieve it to be sure you are using the most recent copy.

Type TDIRECTORY HOSTS.TXT to obtain information about the file HOSTS.TXT.

```
$TDIRECTORY HOSTS.TXT <RET>

 PS:<SYSTEM>
                          Write

 HOSTS.TXT 27-MAR-85 18:11:54
 $
```

When your system has access to the ARPANET networks, obtain a new HOSTS.TXT file with the following command sequence.

                              NOTE

          You must have your TCP/IP monitor up and running
          before you can issue the following command sequence.

```
@ENABLE <RET>
$IPHOST <RET>

IPHOST - TOPS-20AN TCP/IP Host Utility Program - Version 6.1(42)

Interface   0, net   10.0.0.0 [ARPANET], adr 10.0.0.79 [DEC-TOPS20]
Interface   1, net   192.5.6.0 [DEC-MRRAD], adr 192.5.6.1 [DEC-TOPS20]
Interface   2, net   192.5.5.0 [DEC-MRNET], adr 192.5.5.4 [DEC-TOPS20]

IPHOST>RETRIEVE HOST SRI-NIC 101 HOSTS.TXT <RET>

 [ Opening TCP connection ] [OK]
 [ Receiving TCP data ........................................ ] [OK]
 [ Closing TCP connection ] [OK]


IPHOST>EXIT <RET>
 $
```

The RETRIEVE command gets the HOST table from SRI-NIC on port 101 and places the table into the file HOSTS.TXT. (Recognition input can be of help with this command.)

**➡ Step 27:** **Enter TYPE INTERNET.GATEWAYS and press the RETURN key.**

The INTERNET.GATEWAYS file should be in your SYSTEM: area.  It defines
which gateways to the ARPANET your TOPS-20 host can talk to.  DIGITAL
provides a file in the correct INTERNET.GATEWAYS format with the
TCP/IP software.  This file contains the gateway addresses for your
TOPS-20 host to communicate with the ARPA MILNET gateways.  Your
TOPS-20 host will be able to talk to only the MILNET gateways
specified by the NIC and the NOC for your site.  Contact your ARPANET
liaison if you have questions.

Enter the TYPE command to display the file INTERNET.GATEWAYS on your
terminal.

```
$TYPE INTERNET.GATEWAYS <RET>
;created by...
Created 25 JUN 1985 1858-PST
;GW/PRIME Internet
PRIME 10.0.0.94., 192.5.2.6.
        .
        .
        .
$
```

When your system has access to the ARPANET networks, obtain a new
INTERNET.GATEWAYS file with the following command sequence.

NOTE

        You must have your TCP/IP monitor up and running
        before you can issue the following command sequence.


```
@ENABLE <RET>
$IPHOST <RET>

IPHOST - TOPS-20AN TCP/IP Host Utility Program - Version 6.1(42)

Interface    0, net    10.0.0.0 [ARPANET], adr 10.0.0.79 [DEC-TOPS20]
Interface    1, net    192.5.6.0 [DEC-MRRAD], adr 192.5.6.1 [DEC-TOPS20]
Interface    2, net    192.5.5.0 [DEC-MRNET], adr 192.5.5.4 [DEC-TOPS20]

IPHOST>RETRIEVE GATEWAY SRI-NIC 101 INTERNET.GATEWAYS <RET>

 [ Opening TCP connection ] [OK]
 [ Receiving TCP data . ] [OK]
 [ Closing TCP connection ] [OK]

IPHOST>EXIT <RET>
$
```

The RETRIEVE command gets the GATEWAY table from SRI-NIC on port 101
and places the table into the file INTERNET.GATEWAYS.  (Recognition
input can be of help with this command.)

**➡ Step 28:   Determine which gateway addresses to place in your file.**

The addresses in the INTERNET.GATEWAYS file must be in the form:

    network-name gateway-address, alternate-gateway-address

Each address has the format

    n.n.n.n

where n specifies a decimal octet (that is, an 8-bit decimal number) of the internet address.

An internet address consists of four decimal octets (that is, a total of 32 bits).  For example, the internet address for host DEC-MARLBORO is 10.1.0.79.

With the help of the ARPANET NIC and NOC, or your ARPANET liaison, determine which gateway addresses to place in your file.


**➡ Step 29:   Place the correct addresses into INTERNET.GATEWAYS.**

You must edit the INTERNET.GATEWAYS file you receive from DIGITAL to contain the gateway addresses for your site.  Therefore, use an editing program to place the correct addresses into the file and save the customized file in your SYSTEM: area.


**➡ Step 30:   Shut down the system and then read Chapter 5 of this guide.**

Shut down your system in an orderly fashion and then read Chapter 5 of this guide to reboot the system from disk.  By rebooting the system, you load the HOSTS.TXT and INTERNET.GATEWAYS files.  Once you reboot, you can begin timesharing.

# APPENDIX D

## GENERATING A TAILORED BATCH AND SPOOLING SYSTEM

This appendix describes how to generate a TOPS-20 batch and spooling (GALAXY) system specifically tailored for your installation. To do this you must have already installed a standard Release 5 GALAXY system. The standard GALAXY system is satisfactory for most sites. The procedures shown in Chapters 1 through 7 of this guide, or in Appendix A or B, describe how to install Release 6.1 TOPS-20 software, including a standard Release 5 GALAXY system. After performing those procedures, you can use the steps in this appendix if you need to generate a GALAXY system having different parameters from the standard one.

NOTE

> While the steps in generating a tailored Release 5 GALAXY system can be used with timesharing users logged in, the critical phase of stopping the standard Release 5 system and starting up your tailored one (Steps 28 through 50) should, for safety reasons, be performed on a stand-alone system. The queues need not be empty, however, as long as a Release 5 (as opposed to Release 4.2 or earlier) GALAXY system is already running.

The following paragraphs summarize the procedure for generating and starting up a new GALAXY system.

1. Run the DUMPER program to restore the GALAXY source files to disk. In addition to the source code, the files include a special batch control file called GALAXY.CTL.

2. Run the GALGEN program to create a file containing the new GALAXY system parameters. The name of the parameter file is GALCNF.MAC.

3. Submit the control file GALAXY.CTL to your currently running batch system. The batch job that is created by GALAXY.CTL reads the parameter file created by GALGEN and generates a new set of GALAXY files of type .EXE in a temporary area. The batch job creates a log file that should be saved for reference.

4. Stop all the components of the currently running GALAXY system (QUASAR, LPTSPL, etc.).

5. Copy all the old GALAXY files from their current area (usually SYS:) to some other area.

6. Copy all the new GALAXY files from the temporary area to SYS:.

7. Start up the components of the new GALAXY system.

8. Delete the .EXE files of the old GALAXY system when the new
   batch system is operating correctly. If you want to be
   cautious, you can save the old .EXE files on tape or in a
   backup directory (see Step 36 in this appendix). You can
   also delete the GALAXY source files (and the unrelated files
   restored along with them from the Distribution tape).
   However, if your installation can spare the disk space, it is
   more convenient to leave the sources on disk. Then, if any
   code patches must be made to the batch system, you have the
   sources readily available. Otherwise, you have to restore
   the sources from the software tape if patching is required.

NOTE

The procedures described below assume that you have a
Release 5 GALAXY system currently running. These
procedures can be carried out during normal
timesharing.

## D.1  RESTORING THE GALAXY SOURCE FILES

To restore the GALAXY source files, you must build a directory, mount
the Distribution tape, and run the DUMPER program. Perform Steps 1
through 22 to restore the GALAXY files.

NOTE

The steps in this appendix assume that you are using
the console terminal (CTY).

● 

➡ <u>Step 1:  Log in and enable WHEEL or OPERATOR privileges.</u>

You must be enabled and have privileges to perform these procedures.
Follow the example to log in and enable your capabilities.

```
Installation-test System, TOPS-20 Monitor 6.1(nnnn)
@LOGIN OPERATOR your-password <RET>
Job 5 on TTY8 dd-mmm-yy hh:mm:ss, Last Login dd-mmm-yy hh:mm:ss
@ENABLE <RET>
$
```

NOTE

If you have tape drive allocation enabled, perform
Steps 2 through 6.  Otherwise, continue at Step 7.

NOTE

If you have already restored ALL of the savesets on
the Distribution tape (as described in Chapter 6), you
need not restore the GALAXY saveset again.  Proceed to
Step 16.

➡ Step 2:   Type OPR and press the RETURN key.

| Type OPR to run the OPR program to set a tape drive unavailable.
|
|        $OPR <RET>
|        OPR>


➡ Step 3:   Type SHOW STATUS TAPE-DRIVE /ALL and press the RETURN key.

To find out what drives on the system are available, type SHOW STATUS
TAPE-DRIVE /ALL.   The system prints the status of all tape drives on
the system.   Use any tape drive that has the status of "UNLOADED."

```
|        OPR>SHOW STATUS TAPE-DRIVE /ALL <RET>
|        OPR>
|        15:00:09              --Tape Drive Status--
|        DRIVE     STATE   VOLID    REQ#     JOB#   USER
|        -----     -----   -----    ----     ----   ----
|        MTA0:     Available
|        MTA1:     Unloaded
|                  AVR: Yes
|        MTA2:     Unloaded
|                  AVR: Yes
|        MTA3:     Unloaded
|                  AVR: Yes
|        MTA5:     Unloaded
|                  AVR: Yes
|        MTA6:     Unavailable
|        OPR>
```


➡ Step 4:   Type SET TAPE-DRIVE MTAn:  UNAVAILABLE and press the RETURN
            key.

To allow the use of a tape drive without the intervention of the
MOUNTR program, type SET TAPE-DRIVE MTAn: UNAVAILABLE. The example
uses MTA0: as the tape drive, but you can specify any tape drive that
has the status UNLOADED.

```
        OPR>SET TAPE-DRIVE MTA0: UNAVAILABLE <RET>
        Enter text and terminate with ^Z
```


➡ Step 5:   Type USING GALGEN PROCEDURE and press <CTRL/Z>.

After the system prints "Enter text and terminate with ^Z," type the
text USING GALGEN PROCEDURE and then press <CTRL/Z>. The system
prints the OPR prompt and several messages.

```
|        Enter text and terminate with ^Z
|        USING GALGEN PROCEDURE ^Z
|        OPR>
|        SJ  0: PTYCON>
|        SJ  0: **** OPR(6) 15:01:41 ****
|        SJ  0:
|        SJ  0: 15:01:41      -- Tape Drive Set Unavailable --
|        SJ  0:            MTA0: set unavailable for assignment by MOUNTR
|        SJ  0: OPR>
|
|        15:01:41           -- Tape Drive Set Unavailable --
|                    MTA0: set unavailable for assignment by MOUNTR
|        OPR>
```

➡ Step 6:  Type EXIT and press the RETURN key.

To return to TOPS-20 command level, type EXIT.

        OPR>EXIT <RET>
        $


➡ Step 7:  Type ASSIGN MTAØ:  and press the RETURN key.

To assign tape drive Ø to your job, type ASSIGN MTAØ:.

        $ASSIGN MTAØ: <RET>
        $

                        NOTE

        The examples in this guide  use  MTAØ:   as  the  tape
        drive.  However, you can assign and use any tape drive
        that has the status UNLOADED; MTAØ:  is  not  required.
        Be  sure  to use the name of the tape drive you assign
        in Step 7 whenever MTAØ: appears in this appendix.


➡ Step 8:  Type BUILD PS:<BUILD> and press the RETURN key.

Create a directory to hold the GALAXY source files.  Although you  can
give  it any name, a reasonable name for this directory is PS:<BUILD>,
because it is also known as the build area.   To  do  so,  type  BUILD
PS:<BUILD>.   The  system  displays either [New] if the directory does
not already exist or [Old] if the directory  exists.   The  subcommand
prompt ($$) follows.

        $BUILD PS:<BUILD> <RET>
        [New]
        $$


➡ Step 9:  Assign storage space.

Assign sufficient storage space to the directory to allow  copying  of
the  entire  fourth saveset (not just the GALAXY sources).  Follow the
example to assign storage space and to end the BUILD procedure.

        $$WORKING 3ØØØ <RET>
        $$PERMANENT 3ØØØ <RET>
        $$<RET>
        $


➡ Step 1Ø:  Mount the Distribution tape on MTAØ:.

To restore the GALAXY files from tape, mount the Distribution tape  on
the  tape  drive  you assigned in Step 7.  (If you need help, refer to
Chapter 2, Section 2.2, Step 9, of this guide.)  Be sure the drive  is
on line.


➡ Step 11:  Type DUMPER and press the RETURN key.

You need to run the DUMPER program to restore the GALAXY source  files
from  tape.   To run this program, type DUMPER.  The system prints the
DUMPER prompt.

```
$DUMPER <RET>
DUMPER>
```

➡️Step 12:   Type TAPE MTA0:  and  press  the  RETURN  key.   Then  type
             ACCOUNT SYSTEM-DEFAULT and press the RETURN key.

To tell the DUMPER program which tape drive you are using,  type  TAPE
MTA0:.   Then  type  ACCOUNT SYSTEM-DEFAULT to tell DUMPER to use the
system-default account.

```
DUMPER>TAPE MTA0: <RET>
DUMPER>ACCOUNT SYSTEM-DEFAULT <RET>
DUMPER>
```

➡️Step 13:   Type SKIP 3 and press the RETURN key.

To skip over the first three savesets on the Distribution  tape,  give
the  command  SKIP 3.   The DUMPER program prints a message identifying
each saveset it skips, and then gives the DUMPER prompt.  Be  prepared
for a 5 to 10 minute wait while DUMPER positions the tape.

```
DUMPER>SKIP 3 <RET>
          .
          .
          .
DUMPER>
```

➡️Step 14:   Type  RESTORE  PS:<*>*.*.*  PS:<BUILD>*.*.*  and  press  the
             RETURN key.

To restore all the files from the fourth saveset (including the GALAXY
source  files), type the RESTORE command.  The system prints a message
identifying the saveset and the number of files  and  pages  restored,
followed by the DUMPER prompt.

```
DUMPER>RESTORE PS:<*>*.*.* PS:<BUILD>*.*.* <RET>
Saveset ""GALAXY SOURCES FOR TOPS-20 V6.1""
 Loading files into PS:<BUILD>
 End of Tape.


 Total files restored:     n
 Total pages restored:     n
DUMPER>
```

Error:     If DUMPER does not print a message identifying  the  saveset
           as  "GALAXY  SOURCES  FOR  TOPS-20  V6.1,"  the  tape is not
           positioned at the correct saveset.  Give the REWIND  command
           to DUMPER and begin again at Step 13.

Error:     If the message "Loading  files  into  PS:<BUILD>"  does  not
           appear, no files are being restored from tape.  Be sure that
           the correct tape is mounted  on  the  tape  drive  you  have
           assigned to your job.  Then exit from DUMPER and begin again
           at Step 8.  If errors persist, the tape may be bad.  Contact
           your DIGITAL Field Service Representative for assistance.

➡️**Step 15:** **End the DUMPER program.**

Once the fourth saveset has been restored from tape, end the DUMPER program. To do so, follow the example to rewind the tape and exit from DUMPER. The system prints the TOPS-20 ENABLEd prompt ($).

```
DUMPER>REWIND <RET>
DUMPER>EXIT <RET>
$
```

➡️**Step 16:** **Type INFORMATION DISK-USAGE PS:<BUILD> and press the RETURN key.**

To verify that you have restored all the files from the fourth saveset of the Distribution tape, type INFORMATION DISK-USAGE PS:<BUILD>. The system prints information about the amount of disk space used by the directory.

```
$INFORMATION DISK-USAGE PS:<BUILD> <RET>
PS:<BUILD>
2597 Pages assigned
3000 Working, 3000 Permanent pages allowed
34540 Pages free on PS:, 41460 pages used.
$
```

NOTE

If you restored the GALAXY saveset to another directory, use that directory name in Step 16.

➡️**Step 17:** **STOP.**

If the number of pages assigned does not approximately match the number shown in Step 16, you may not have restored all the files necessary for creating a GALAXY system. Check to be sure you have the correct tape mounted, then begin again at Step 11.

NOTE

If you previously restored the GALAXY saveset (as described in Chapter 6), and have the appropriate number of pages assigned, proceed to Step 23. Otherwise, restore the GALAXY saveset again, starting at Step 2.

➡️**Step 18:** **Type UNLOAD MTA0: and press the RETURN key.**

To unload the tape from the tape drive, type UNLOAD MTA0:. The system rewinds the tape onto the source reel.

```
$UNLOAD MTA0: <RET>
$
```

You can now remove the Distribution tape from the tape drive.

➡️**Step 19:** **Type DEASSIGN MTA0: and press the RETURN key.**

Once you unload the tape from the drive, return the tape drive to the pool of available resources. To do so, type DEASSIGN MTA0:.

```
$DEASSIGN MTA0: <RET>
$
```

NOTE

If you performed Step 4, which removed a tape drive
from the system's usage, perform Steps 20 through 22.
Otherwise, continue at Step 23.

➡ Step 20:  Type OPR and press the RETURN key.

Run the OPR program to set the tape drive available to users.

```
$OPR <RET>
OPR>
```

➡ Step 21:  Type SET TAPE-DRIVE MTA0: AVAILABLE and press the RETURN
            key.

To return the tape drive you removed from system usage in Step 4, type
SET TAPE-DRIVE MTA0: AVAILABLE.

```
OPR>SET TAPE-DRIVE MTA0: AVAILABLE <RET>
OPR>
15:13:53          -- Tape Drive Set Available --
          MTA0: set available for assignment by MOUNTR
SJ  0: PTYCON>
SJ  0: **** OPR(6) 15:13:53 ****
SJ  0:
SJ  0: 15:13:53          -- Tape Drive Set Available --
SJ  0:            MTA0: set available for assignment by MOUNTR
SJ  0: OPR>
OPR>
```

➡ Step 22:  Type EXIT and press the RETURN key.

To return to TOPS-20 command level and continue with this procedure,
type EXIT.  The system prints the ENABLEd prompt ($).

```
OPR>EXIT <RET>
$
```

## D.2  RUNNING THE GALGEN PROGRAM

Run the GALGEN program to create the GALAXY configuration file.  Be
sure you run GALGEN Version 5, which is the latest version.

➡ Step 23:  Type GALGEN and press the RETURN key.

You must run the GALGEN program to create the GALAXY configuration
file  PS:<BUILD>GALCNF.MAC,  which  will  contain  the  parameters
describing the tailored GALAXY system you are building.  Type  GALGEN
and  press  the RETURN key.  The GALGEN program responds by giving its
name and version number,  and  then  printing  several  paragraphs  of
information.

$GALGEN <RET>


| GALGEN Version 5(3624)

[Starting GALAXY Generation Procedure for TOPS-20 System]
[Writing GALAXY Configuration File PS:<BUILD>GALCNF.MAC.1]

In the following dialog, all questions are of the form:

   text of question (list or range of answers) [default answer]

The line starts with the actual text of the question. Following
the question is a description of the possible answers enclosed in
parentheses. This description might be a range of numbers, a
list of keywords, or a textual description. Following this
description is the default answer, enclosed in square brackets.
The default will be assumed if you only press the RETURN key.


You have the choice of carrying on a LONG dialog in which an
explanation of each question is provided automatically, or a
SHORT dialog in which it is assumed that you are familiar with
the GALAXY generation procedure. In either case, you can always
obtain the help text by typing a question mark (?) in response to
any question.

Answer the following question with either LONG (for a long
dialog) or SHORT (for a short one). Simply pressing the RETURN
key implies SHORT.


Dialog Length (SHORT,LONG) [SHORT]


➡Step 24: STOP.

You have the option of a long dialog, in which GALGEN explains the
choices it offers you, or a short one, in which only the choices
themselves are displayed. If you are an experienced user of GALGEN,
you may want the short dialog, which is faster; in this case, press
| the RETURN key and skip to Step 26. Otherwise, continue at Step 25.


➡Step 25: Type LONG and press the RETURN key.

To request the long dialog with GALGEN, type LONG and press the RETURN
key. GALGEN responds with some information and then the first
question about GALGEN parameters.

| Dialog Length (SHORT,LONG) [SHORT] **LONG <RET>**


                    Administrative Controls and Parameters
                    --------------- --------- --- ----------


The questions in this section determine absolute GALAXY
parameters, which cannot be overridden by user or operator
commands.

The system logs all operator interactions in a disk file in the spooling area. Your answer to the following question specifies the name to be used for this file.


Operator log filename(3-20 Characters) [OPERATOR-SYSTEM]


➡️Step 26: Answer the questions in the GALGEN display.

GALGEN presents a series of questions, one at a time, for you to
| answer. If you asked for a long dialog in Step 25, an explanation of each question is included. Otherwise, you see only the questions, the range of choices, and the default answer. The default answer is the one that appears in brackets ([]). This value (the default) is used if you answer the question by pressing the RETURN key.

| Following is a sample of the dialog you would see if you typed LONG in
| Step 25. Press the RETURN key when you want the default answer shown
| in brackets and are ready to see the next question in the GALGEN
| dialog. Otherwise, type your answer and then press the RETURN key to
| see the next question.
|
| In the sample dialog, the default answer is taken for all questions
| except the last question in the dialog.

NOTE

You must supply the correct values for your own system.


| Operator log filename(3-20 Characters) [OPERATOR-SYSTEM] <RET>


Users can specify a priority for their batch and spooling requests with the /PRIORITY switch. The allowable values on this parameter range between 1 (representing lowest priority) and 63 (representing the highest). The following two questions relate to this switch. The first question requests the maximum priority which may be specified by a non-privileged user.


| Maximum priority non-privileged users may specify(1-63) [20]
| <RET>


You may specify the value to be used if the user does not specify a /PRIORITY switch. This value must be between 1 and the maximum that you specified in the previous question.


| Default for /PRIORITY on batch and spooling requests(1-63) [10]
| <RET>


| This value is to control the number of objects (printers, batch
| streams, etc.) that can be controlled by a single command in OPR.
| This value should be at least the maximum number of objects of a
| single type you may have. The value must be at least 1.
|
|
| Maximum number of objects that can be controlled with one command
| (1-100) [6] <RET>

Specify the highest number that a batch stream can be on the system. The value must be greater than zero and less than or equal to 10000.

Highest number a batch stream can be on the system (1-10000) [100] <RET>

The priority of a process and the permissable range of queues it may run in is determined by the scheduler priority control word. A system process gets a higher priority than all user jobs and gets as much time as is necessary for execution.

Do you wish QUASAR to run as a system process?(YES,NO) [YES] <RET>
Do you wish ORION to run as a system process?(YES,NO) [YES] <RET>
Do you wish BATCON to run as a system process?(YES,NO) [YES] <RET>
Do you wish LPTSPL to run as a system process?(YES,NO) [YES] <RET>

## Applications

The following section establishes parameters for applications supported by GALAXY (for example, NCP). These applications will be accessible through OPR, the operator interface.

You can enable applications through your answers to the following questions.

Will you be running applications?(YES,NO) [YES] <RET>

Each application must be associated with an application table name (for example, NCPTAB).

Application name or carriage return to exit(1-20 characters) <RET>

### NOTE

If you are running applications supported by GALAXY, refer to the appropriate documentation to determine the application table names. If you are running DECnet-20, refer to the DECnet-20/PSI-20 System Manager's Guide and the DECnet-20 Network Generation and Procedures manual.

GENERATING A TAILORED BATCH AND SPOOLING SYSTEM

## Batch Job Defaults

The questions in this section are used to define  default  values
for the various options that a user can specify when submitting a
batch job.


The batch user can specify a maximum runtime for  his  batch  job
using  the /TIME switch.  If he does not specify this switch, the
following default will be used:


Default batch job runtime limit(5-9999 seconds) [300] <RET>


Every batch job has maximum  limits  for  each  type  of  spooled
output.   These  limits  can  be  set  by  the  batch  user  with
appropriate switches to the SUBMIT command.  If the user  doesn't
specify these switches, the following defaults will be used:


| Line printer output limit(0-9999 pages) [200] <RET>
| Card punch output limit(0-9999 cards) [1000] <RET>
| Paper tape punch output limit(0-5000 feet) [200] <RET>
| Plotter output limit(0-5000 minutes) [30] <RET>


The user can specify whether or not the batch log file should  be
printed  after  the job terminates by using the /OUTPUT switch to
the SUBMIT command.  The action is specified by:  LOG  to  always
print  the log file, NOLOG to never print the log file, and ERROR
to print the log file only if the job  ended  with  an  unhandled
error.   If  the  user doesn't specify this switch, the following
value will be used.


| Default for batch SUBMIT/OUTPUT (LOG,NOLOG,ERROR) [LOG] <RET>


## Line Printer Defaults and Parameters


The questions in this section are used to set default values  for
the line printer spooler.


Job banner pages printed at the beginning of each print  request.
The user's name and any /NOTE value is printed on them.


| Number of job banner pages (0-5) [2] <RET>

Job trailer pages are printed at the end of each print request.
The user's name and any spooler checkpoint information is printed
on them.

| Number of job trailer pages(0-5) [2] <RET>

File header pages are printed before each file or copy in each
print request. The file name is printed in BOLD letters on each
header page.

| Number of file header pages(0-5) [2] <RET>

The user can specify a special form for a print request with the
/FORMS switch. If this switch is not specified, the following
default will be used.

| Name for standard output forms(4-6 Characters) [NORMAL] <RET>

The number of characters that uniquely identify a form is
compared with the current form name to determine if a forms
change is required for a specific user request.

| Number of characters which uniquely identifies form(2-6) [4]
| <RET>


                        Tape Label Action
                        ━━━━ ━━━━━ ━━━━━━


The system administrator can allow non-privileged users to bypass
label processing.

| Allow bypassing for non-privileged users?(YES,NO) [NO] <RET>


                Miscellaneous Defaults and Parameters
                ━━━━━━━━━━━━━ ━━━━━━━━ ━━━ ━━━━━━━━━━


The questions in this section refer to general GALAXY parameters.


The following section establishes default bias and disk page to
spooler unit conversion factors.

| Do you want the standard limit computation(YES,NO) [YES] <RET>

The default action to be taken when output exceeds the specified limit for an output spooler may be to ABORT the job and ignore all remaining output, ASK the operator what to do, or PROCEED to finish processing the job.


Default output-limit-exceeded action(ABORT,ASK,PROCEED)   [ASK]
**ABORT** <RET>


[End of Galgen Dialog]
$


## D.3   ASSEMBLING THE NEW GALAXY SYSTEM

In the last step you completed the GALGEN program, which produced the GALAXY parameter file, GALCNF.MAC. This file contains your choice of options for a tailored batch and spooling system. To create this batch and spooling system you must submit the GALAXY control file, GALAXY.CTL, to your present batch system. GALAXY.CTL reads GALCNF.MAC and generates the files and programs for a tailored GALAXY system. Perform Step 27 to assemble the new GALAXY system.


➡ Step 27:   Type  SUBMIT   PS:<BUILD>GALAXY.CTL/TIME:0:30:00/RESTARTABLE
             and press the RETURN key.

To start the assembly process, submit the .CTL file to the batch queue. After doing so, the system prints a message giving the job name, the request I.D., and the time limit of the batch job.

```
$SUBMIT PS:<BUILD>GALAXY.CTL.1/TIME:0:30:00/RESTARTABLE <RET>
[Batch job GALAXY queued, Request #170, limit 0:30:00]
$
SJ  0:
SJ  0: 15:20:48      Batch-Stream 0      -- Started --
SJ  0:
SJ  0: 15:20:48      Batch-Stream 1      -- Started --
SJ  0:
SJ  0: 15:20:48      Batch-Stream 2      -- Started --
SJ  0: OPR>
SJ  0: 15:20:49      Batch-Stream 0      -- Begin --
SJ  0:               Job GALAXY Req #170 for OPERATOR
$
```

While the GALAXY system assembly proceeds (this may take an hour), the system prints messages for each successful assembly it completes. The messages are similar to the following example.

```
SJ  0: OPR>
SJ  0: 15:39:07      Batch-Stream 2 JOB #7 -- Message from Batch
User --
SJ  0:               Job PLEASE Req #6 FOR OPERATOR
SJ  0:               PLEASE   PLEASE Assembly Successful$
SJ  0: OPR>
SJ  0: 15:39:15      Batch-Stream 2      -- End --
SJ  0:               Job PLEASE Req #6 for OPERATOR
SJ  0: OPR>
SJ  0: 15:39:16      Batch-Stream 2      -- Begin --
SJ  0:               Job CDRIVE Req #8 for OPERATOR
```

NOTE

If assembly is unsuccessful, examine the appropriate
.LOG file to see if you can find the problem. If you
can, correct it (which might involve editing the
control file), delete the .LOG file, and resubmit the
specified .CTL file. If you are unable to determine
what caused the failure, consult your systems
programmer or software specialist.

Once the assembly completes, you can run the new batch system.
However, before you proceed to the next step, it is advisable to check
the .LOG files to be sure that no problems arose during batch system
generation. It is conceivable that a %-type (warning) error occurred.
Such an error might not cause processing of GALAXY.CTL to be
unsuccessful, but could create problems later when you attempt to use
the new batch system. Therefore, it is important that you correct any
problems now, before you stop running the current batch system.

## D.4 SHUTTING DOWN THE OLD GALAXY SYSTEM

Once you have checked the .LOG files to be sure that no errors
occurred during the build procedure, you are ready to stop all old
GALAXY programs and start the new ones. Perform Steps 28 through 41
to do so.

NOTE

During the following steps, Steps 28 thorugh 53, it is
important NOT to have timesharing users logged in to
the system, as their jobs could initiate batch or
spooling requests during the critical period of
changeover. However, it is acceptable for requests to
be present in the queues at the time of Step 30 as
long as the old GALAXY system is a Release 5 system.

➡ Step 28:  Type OPR and press the RETURN key.

To return to the OPR program so you can stop the old GALAXY objects,
type OPR. The system prints the OPR prompt.

    $OPR <RET>
    OPR>

➡ Step 29:  Type SHOW STATUS and press the RETURN key.

To determine which GALAXY objects are in use, give the SHOW STATUS
command. The system responds with a list of GALAXY objects.

    OPR>SHOW STATUS <RET>
    OPR>
    16:32:03          -- System Device Status --

    Batch-Stream Status:
      Strm       Status
      ----    ----------------
        0    Idle
        1    Idle
        2    Idle

```
Printer Status:
  Unit       Status
  ----    ----------------
     Ø   Idle

OPR>
```

➡ Step 3Ø:   Type a SHUTDOWN command for each GALAXY object.

To be sure that each GALAXY object shuts down, type a SHUTDOWN command
for each GALAXY object shown in Step 29.

```
OPR>SHUTDOWN PRINTER Ø <RET>
OPR>
16:32:26      Printer Ø       -- Shutdown --
SJ  Ø: OPR>
SJ  Ø: 16:32:26     Printer Ø       -- Shutdown --
OPR>SHUTDOWN BATCH-STREAM Ø:2 <RET>
OPR>
16:32:37      Batch-Stream Ø    -- Shutdown --

16:32:37      Batch-Stream 1    -- Shutdown --

16:32:37      Batch-Stream 2    -- Shutdown --
SJ  Ø: OPR>
SJ  Ø: 16:32:37      Batch-Stream Ø    -- Shutdown --
SJ  Ø:
SJ  Ø: 16:32:37      Batch-Stream 1    -- Shutdown --
SJ  Ø:
SJ  Ø: 16:32:37      Batch-Stream 2    -- Shutdown --
OPR>
```

Error:    If you see a message similar to  "--THERE  ARE  NO  DEVICES
          STARTED--,"  you  can   ignore  this message and go on to the
          next SHUTDOWN command. The message  means   only  that  your
          site was not using the specified device.

➡ Step 31:   Type SHOW STATUS and press the RETURN key.

To verify that all parts of the GALAXY system are shut down, give  the
SHOW STATUS command.

```
OPR>SHOW STATUS <RET>
OPR>
16:32:47              -- There are no devices started --
OPR>
```

➡ Step 32:   Type EXIT and press the RETURN key.

To return to  TOPS-2Ø  command  level  so  you  can  stop  the  GALAXY
components, type EXIT.  The system prints the ENABLEd prompt ($).

```
OPR>EXIT <RET>
$
```

➡ Step 33:   Type ^ESPEAK and press the RETURN key.

To stop the GALAXY components you must enter the ^ESPEAK command.  The
system prints [Please type SYSJOB commands - end with ^Z].

```
$^ESPEAK <RET>
 [Please type SYSJOB commands - end with ^Z]
```

➡ Step 34:  Stop each GALAXY component.

You should stop all the components referenced in SYSJOB.RUN.  You
should also stop BATCON, which normally runs as a separate job under
SYSJOB.  Follow the example to stop the GALAXY components.

```
    [Please type SYSJOB commands - end with ^Z]
KILL QUASAR <RET>
KILL ORION <RET>
KILL MOUNTR <RET>
KILL CDRIVE <RET>
KILL SPRINT <RET>
KILL LPTSPL <RET>
KILL BATCON <RET>
CCJOB 1 <RET>
STATUS <RET>
```

➡ Step 35: Type <CTRL/Z>.

To return to TOPS-20 command level, type <CTRL/Z>. The system prints
several messages and then the TOPS-20 ENABLEd prompt ($).

```
    ^Z
$KILL QUASAR
KILL ORION
KILL MOUNTR
KILL CDRIVE
KILL SPRINT
KILL LPTSPL
KILL BATCON
CCJOB 1
STATUS
SYSJOB status at 31-May-85 1639
   0 INFO    DISMS at 1013    31-May-85 1639
   1 MAPPER DISMS at 266     31-May-85 1639
   5 MAILER DISMS at 1225    31-May-85 1639
   7 LPTSPL DISMS at 415322 31-May-85 1639
   0: Job 1, TTY 160, PTYCON
   1: Job 2, TTY 161, EXEC
$
```

➡ Step 36:  Type BUILD PS:<OLD-GALAXY> and press the RETURN key.

You should create a directory to store your old GALAXY  system  before
copying your new one into SYS:.  To do so, type BUILD PS:<OLD-GALAXY>.
The system prints [New] and the subcommand prompt ($$).

```
$BUILD PS:<OLD-GALAXY> <RET>
[New]
$$
```

➡ Step 37:  Press the RETURN key.

To create a directory with default characteristics, press  the  RETURN
key.  You return to TOPS-20 command level.

```
[New]
$$<RET>
$
```

➡ Step 38:    Type COPY  SYS:QUASAR.EXE  PS:<OLD-GALAXY>*  and  press  the
              RETURN key.

To copy your old QUASAR program into the back-up  directory  that  you
just  created,  type  the  COPY  command.   The  system prints an [OK]
message when the copy completes.

```
$COPY SYS:QUASAR.EXE PS:<OLD-GALAXY>* <RET>
 PS:<SUBSYS>QUASAR.EXE.1 => PS:<OLD-GALAXY>QUASAR.EXE.1 [OK]
 $
```

➡ Step 39:    Copy  the  other  files  of  your  GALAXY  system  into
              PS:<OLD-GALAXY>.

| Repeat Step 38 as many times as necessary to copy  all  the  files  of
your present GALAXY system into PS:<OLD-GALAXY>.  You must copy all of
the following files, if they exist:

```
BATCON.EXE
CDRIVE.EXE
GLXLIB.EXE
LPTSPL.EXE
MOUNTR.EXE
OPR.EXE
ORION.EXE
PLEASE.EXE
QUASAR.EXE
SPRINT.EXE
SPROUT.EXE
```

D.5   STARTING UP THE NEW GALAXY SYSTEM

Now you are ready to replace the old GALAXY system on SYS:   with  your
| new tailored system (Steps 40 through 48).

NOTE

|        If you restored the GALAXY source files to a directory
|        other  than  PS:<BUILD>,  use  that  directory name in
|        Steps 40 and 41.

➡ Step 40:    Type  COPY  PS:<BUILD>QUASAR.EXE  PS:<SUBSYS>QUASAR.EXE  and
              press the RETURN key.

To copy the QUASAR.EXE component of the new  GALAXY  system  into  the
system area, type the COPY command.  The system prints an [OK] message
when the copy completes.

```
$COPY PS:<BUILD>QUASAR.EXE PS:<SUBSYS>QUASAR.EXE <RET>
 PS:<GALAXY>QUASAR.EXE.1 => PS:<SUBSYS>QUASAR.EXE.1  [OK]
 $
```

➡ Step 41:  Copy the other components of the GALAXY system into the system area.

| Repeat Step 40 as many times as it is necessary to copy all the  files
| of  your  new  GALAXY  system into PS:<SUBSYS>.  You must copy all the
| files listed in Step 39.

➡ Step 42:  Type ^ESPEAK and press the RETURN key.

To start the new GALAXY system you must  enter  the  ^ESPEAK  command.
The system prints [Please type SYSJOB commands - end with ^Z].

        $^ESPEAK <RET>
         [Please type SYSJOB commands - end with ^Z]

➡ Step 43:  Start each component in the new GALAXY system.

To be sure that all of the components of the GALAXY system start,  you
must  type  a RUN command for each component referenced in SYSJOB.RUN.
| Follow the example to start the GALAXY components.
|
|        [Please type SYSJOB commands - end with ^Z]
|        RUN SYS:QUASAR <RET>
|        RUN SYS:ORION <RET>
|        RUN SYS:MOUNTR <RET>
|        RUN SYS:CDRIVE <RET>
|        RUN SYS:SPRINT <RET>
|        RUN SYS:LPTSPL <RET>
|        JOB 1 / <RET>
|        RUN SYS:BATCON <RET>
|        / <RET>
|        STATUS <RET>

➡ Step 44:  Type <CTRL/Z>.

| To return to TOPS-20 command level, type <CTRL/Z>.

|        ^Z
|        $RUN SYS:QUASAR
|        RUN SYS:ORION
|        RUN SYS:MOUNTR
|        RUN SYS:CDRIVE
|        RUN SYS:SPRINT
|        RUN SYS:LPTSPL
|        JOB 1 /
|        RUN SYS:BATCON
|        /
|        STATUS
|        SYSJOB status at 31-May-85 1653
|           0 INFO   DISMS at 415322 31-May-85 1653
|           1 MAPPER DISMS at 415322 31-May-85 1653
|           5 MAILER DISMS at 415322 31-May-85 1653
|           7 LPTSPL DISMS at 415322 31-May-85 1653
|        $

➡ Step 45:  Type OPR and press the RETURN key.

You must return to OPR command level to start the components  of  your
new GALAXY system.

```
$OPR <RET>
OPR>
```

➡️ <u>Step 46:</u>  <u>Type</u> <u>TAKE</u> <u>SYSTEM:SYSTEM.CMD</u> <u>and</u> <u>press</u> <u>the</u> <u>RETURN</u> <u>key.</u>

To start all the components of the new GALAXY system, type TAKE
SYSTEM:SYSTEM.CMD.

```
OPR>TAKE SYSTEM:SYSTEM.CMD <RET>
OPR>
16:54:37  Batch-Stream 0     -- Set Accepted --

16:54:37  Batch-Stream 1     -- Set Accepted --

16:54:37  Batch-Stream 2     -- Set Accepted --

16:54:37  Batch-Stream 0     -- Startup Scheduled --

16:54:37  Batch-Stream 1     -- Startup Scheduled --

16:54:37  Batch-Stream 2     -- Startup Scheduled --

16:54:37  Printer 0    -- Set Accepted --

16:54:37  Printer 0    -- Startup Scheduled --
OPR>
```

➡️ <u>Step 47:</u>  <u>Type</u> <u>SHOW</u> <u>STATUS</u> <u>and</u> <u>press</u> <u>the</u> <u>RETURN</u> <u>key.</u>

To verify that each component of your GALAXY system is running
properly, you should now type a SHOW STATUS command.

```
OPR>SHOW STATUS <RET>
OPR>
16:54:57          -- System Device Status --

Batch-Stream Status:
   Strm       Status
   ----    ----------------
      0   Idle
      1   Idle
      2   Idle

Printer Status:
   Unit   Status
   ----   ----------------
      0   Idle

OPR>
```

➡️ <u>Step 48:</u>  <u>Type</u> <u>EXIT</u> <u>and</u> <u>press</u> <u>the</u> <u>RETURN</u> <u>key.</u>

To end the OPR program, type EXIT.

```
OPR>EXIT <RET>
$
```

## D.6  MAKING YOUR NEW GALAXY SYSTEM PERMANENT

Once your new system is successfully running, you may want to delete all the files from PS:<BUILD>, PS:<GALAXY>, and PS:<OLD-GALAXY> to make more disk space available.

➡ Step 49:   Type DELETE PS:<BUILD>*.*,PS:<OLD-GALAXY>*.* and press the
             RETURN key.

| Type the DELETE command to remove the old GALAXY files from disk in
| order to make more disk space available.  The system prints a message
| for each file it deletes.

```
$DELETE PS:<BUILD>*.*,PS:<OLD-GALAXY>*.* <RET>
   .
   .
   .
$
```

<div align="center">NOTE</div>

|        If your GALAXY files are in a directory other than
|        PS:<BUILD>, use that directory name in place of
|        PS:<BUILD> in Step 49.

➡ Step 50:   Type OPR and press the RETURN key.

| To return to OPR level to supervise your new GALAXY system, type OPR.
|
|        $OPR <RET>
|        OPR>

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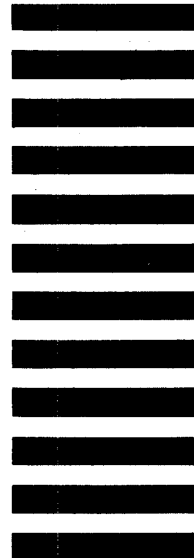                                              or Country

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