

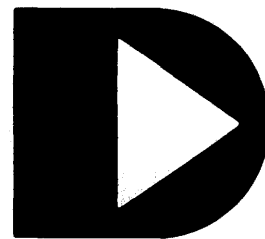
UTILITY PARTITION SUPERVISOR UPS

User's Guide

Version 2

September, 1980

Document No. 50401



DATAPOINT

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UPS

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NOTICE

Datapoint strongly recommends that its customers use Datapoint Customer supplies. These disks, diskettes, cassettes, ribbons and other products are certified by Datapoint to meet all Datapoint Hardware specifications for consistent optimum performance.

PREFACE

UPS is a partition supervisor for the Datapoint 6600 processor. UPS provides concurrent execution of DATASHARE and certain other utility programs.

The intention of this program is to provide a very high efficiency in partitioning the 6600 for DATASHARE applications, specifically, to provide the DATASHARE user the highest possible DATASHARE throughput and maintain simultaneous facilities for most needed utilities, such as compilations, sorting, indexing, and general DOS file utilities. Other programs and languages will execute under some restrictions in the variable partition. However, every situation must be analyzed on its own merits.

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CHAPTER 1. INTRODUCTION

1.1 Differences from version 1

UPS version 2 will allow the use of the upper half of the 6040 256K memory through the use of the additional system call (system call 11). UPS also supports DS6 on either a 120K or 256K 6600.

1.2 Description

UPS will allow execution of only DS5 or DS6 in the fixed partition. The DATASHARE executes in an 'invisible' partition, which does not have a CRT available for the system console and does not allow rollouts, but does provide DSSLAVE support, ACALL facilities, and external communications via MULTILINK (see the respective DATASHARE User's Guide for details of these functions). The variable partition may execute any program that requires no more than 48K bytes of memory (not including System RAM, which is available to the program) and does not require foreground service. Programs which use foreground, like MTE or most of those that use a servo printer, will not be able to run; however, programs such as FASTSORT, INDEX, and DBCMPLUS will be executable. Programs not acceptable to UPS will be rejected during their execution with an appropriate error message (and DS55500 execution will continue unaffected). Chapter 6 lists programs which may be run under UPS.

1.3 Requirements for Execution

UPS requires a Datapoint 6600 processor with 120K or 256K byte memory operating under DOS.D or DOS.E Version 2.6 or later, and DS5 Version 1.2 or DS6 Version 1.1 or later for execution in the fixed partition. Other machines and environments (such as ARC) are not supported.

CHAPTER 2. EXECUTION

UPS is executed by entering 'UPS' on the DOS command line. After UPS has loaded and initialized itself it will request the fixed partition command line. The user should normally enter the DATASHARE command line, after which DATASHARE will initialize, then the variable partition will return to DOS.

DATASHARE must be configured for the fixed partition prior to the execution of UPS. The DATASHARE configurator takes care of the size consideration of the fixed partition automatically when told that DATASHARE will be running under UPS.

CHAPTER 3. UPSTIME

UPSTIME is a utility program provided to allow the user to offer more background time to either partition. UPSTIME must be executed in the variable partition with UPS running. The format of the command line is:

```
UPSTIME <variable>,<fixed>
```

where the two entries are the time slice value in milliseconds that should be allocated to each partition. Values from 1 to 255 are valid, and the initial time slice values are 10 milliseconds for each partition. When a partition is given control, UPS begins to count down the number of milliseconds specified for that partition. UPS will give the other partition control upon either the expiration of the time slice value or a call to WAIT\$ by the program, whichever occurs first. When determining time slices, bear in mind that the variable partition gives up control to DATASHARE whenever it is awaiting keyins or involved in disk activity. This will frequently make it appear that the variable partition has little or no affect on DATASHARE, even with the default value of 10 and 10. In fact, the variable partition will have almost no affect on DATASHARE throughput when sitting idle awaiting keyin commands, no matter what the proportion.

For example:

```
UPSTIME 20,10
```

would set the variable partition time slice to 20 milliseconds and the fixed partition (DATASHARE) time slice to 10 milliseconds.

CHAPTER 4. ASSEMBLY LANGUAGE ROUTINES

UPS is intended to interface with tested Datapoint utilities and software. The user is cautioned that special user-generated assembly language routines may not function as expected under UPS.

The user generally interfaces with UPS via the System Call. A System Call is accomplished by executing an 'SC' op code with the L register containing the system call number. Other registers may contain additional parameters as specified below. Except as noted, a system call will destroy all registers except the X register.

4.1 Base Register Load

To load the base register, the user program must issue a System Call 0 (L register equal to zero) with the desired value to be loaded in the A register. This will allow UPS to reload the base register for the partition before giving control to that partition.

Entry: HL = 0; A = Base register load value.

4.2 Mailman

Mail may be passed between programs running in the partitions via a System Call 1. Note that 'several' messages can be sent at the same time, but that the order of receipt is undefined. The parameters for the system call are as follows:

Entry: L=1
A=0 Requests sending of mail
A=1 Requests receiving of mail
E=addressee (1 - 255, 0 is illegal)
D=message (any value is legal, only used to send)

Exit: Sending
True Zero - mailbox full, try again later
False Zero - message is in the mail

Receiving
True Zero - no mail for you

False Zero - message returned in D register

4.3 Setting of Time Slices

The user may set the time slices by executing a System Call 5 with the D register containing the variable partition's time slice (1-255) and the E register containing the fixed partition's time slice (1-255).

Entry: D = Variable Partition Time in MS. (1-255)
E = Fixed Partition Time in MS. (1-255)

4.4 Disk Controller Buffer Address

UPS maintains the disk controller buffers in main memory. The user may obtain the msb of a desired buffer page by executing a System Call 7 with the B register set to octal 020 times the disk buffer number (0 - 17). UPS will return with the carry flag false and the H register containing the msb of the buffer page.

Entry: B = 020 * Disk Buffer Address.
Exit: False Carry; H => Buffer Page.

4.5 Sector Table Manipulation

System Call 11 is used to manipulate the sector table. For example, DS6 uses this to access the upper half of the 256K memory in the 6040. System Call 11 has the following three functions.

4.5.1 Get New Segment

System call 11, function 0 is used to get ownership of a new segment.

Entry: L = 11; H = 0
Exit: True Carry = No more segment available.
False Carry = Got one; E = It's memory sector.

4.5.2 Get What Segments are Currently Assigned

Entry: L = 11; H = 1
DE = User Destination Address.
Exit: User's Memory Sector in User's Destination Address.

4.5.3 Sector Table Load at Offset

Entry: L = 11; H = 11
DE => String of Memory Sectors for STLOC
C = same as for STLOC in the 6600 Hardware Reference
Manual

4.6 Timed Pause

The timed pause function of DOS (DOS Function 8) is not implemented and an attempt to utilize it will result in an immediate return to the calling program. See the DOS User's Guide for more information on this function.

CHAPTER 5. ERROR MESSAGES.

5.1 UPS Initialization

PS ALREADY ACTIVE

THIS PROGRAM REQUIRES A 6600

THIS PROGRAM REQUIRES DOS 2.4 OR LATER

THIS PROGRAM REQUIRES DOS.D OR DOS.E

UPS OVERLAY LIBRARY INCOMPLETE

UNABLE TO LOAD OVERLAY

UTILITY/REL NOT FOUND ON BOOTED DRIVE

SEC5500 NOT IN UTILITY/REL

INVALID FORMAT IN UTILITY/REL

OBSOLETE VERSION OF UTILITY/REL

UNABLE TO LOAD SEC5500 FROM UTILITY/REL

5.2 UPS Execution

ATTEMPT TO DISPLAY ON SCREEN

ATTEMPT TO READ FROM KEYBOARD

ATTEMPT TO LOAD DOS

ATTEMPT TO USE FOREGROUND (INTERRUPTS)

BAD PARAMETER NUMBER TO SYSTEM CALL

ABOVE ERROR IN VARIABLE PARTITION, FIXED PARTITION CONTINUES

ABOVE ERROR IN FIXED PARTITION, UPS HALTS. REBOOT MACHINE

5.3 UPSTIME

FORMAT ERROR: FORMAT IS UPSTIME <VARIABLE>,<FIXED>

UPS IS NOT RUNNING

CHAPTER 6. ACCEPTABLE VARIABLE PARTITION SOFTWARE

The following is a list of utilities and other software packages supported under UPS in the variable partition.

DBCMPPLUS except with servo printer output
EDITMOD
FASTSORT

DOS Utilities:

APP	AUTO	AUTOKEY	BLOKEDIT
BUILD	CAT	CHAIN	CHANGE
COPY	DECODE	DUMP	EDIT
ENCODE	FILES	FIX	FREE
INDEX	KILL	MANUAL	NAME
REFORMAT	SAPP	SORT	

LIST except with servo printer output
SUR does not affect DATASHARE partition

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Manual Name _____

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