MULTICS STAFF BULLETIN-54

TO: Distribution

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DATE: June 12, 1972

SUBJECT: Memory Map for Follow-On Multics System

This document obsoletes MSB-47.

This document describes how primary memory will be utilized for the follow-on system. It describes how bootstrap1 and BOS lay out the data at bootload time and also how the memory is used during normal Multics operation and normal BOS operation. Reference is made to core blocks which are in units of 1024 word blocks of memory configured.

During its operation, bootstrap1 lays out memory as shown below:

BLOCK NUMBER(S)	ADDRESSES	USE
0	0	INTERRUPT VECTOR
	100	FAULT VECTOR
	200	INTERRUPT TRANSFER PAIRS
	300	INTERRUPT SCU PAIRS
	400	FAULT TRANSFER PAIRS
	500	FAULT SCU PAIRS
	600	DN355 MAILBOX
	1100	PROCESSOR INITIALIZE AREA
	1200	BULK STORE MAILBOX
	1400	IOM (IMW AREA AND MAILBOX)

1	2000	UNUSED (CAN BE RESERVED FOR FUTURE EXPANSION OF IOM's AND DN355's.)
2	4000	BOS TOEHOLD
3	6000	CONFIGURATION DECK
4,5	10000	BOOTSTRAP1
6	14000	TEMPORARY DESCRIPTOR SEGMENT
7,8,	14000	SLT
9,10,11,12,13	22000	NAME TABLE
14	34000	PHYSICAL RECORD BUFFER
15→N-1	36000	PERM WIRED
N→M-1		FREE
M→n-1		PAGED SEGMENTS

Where N and M depend on the particular system being bootloaded.

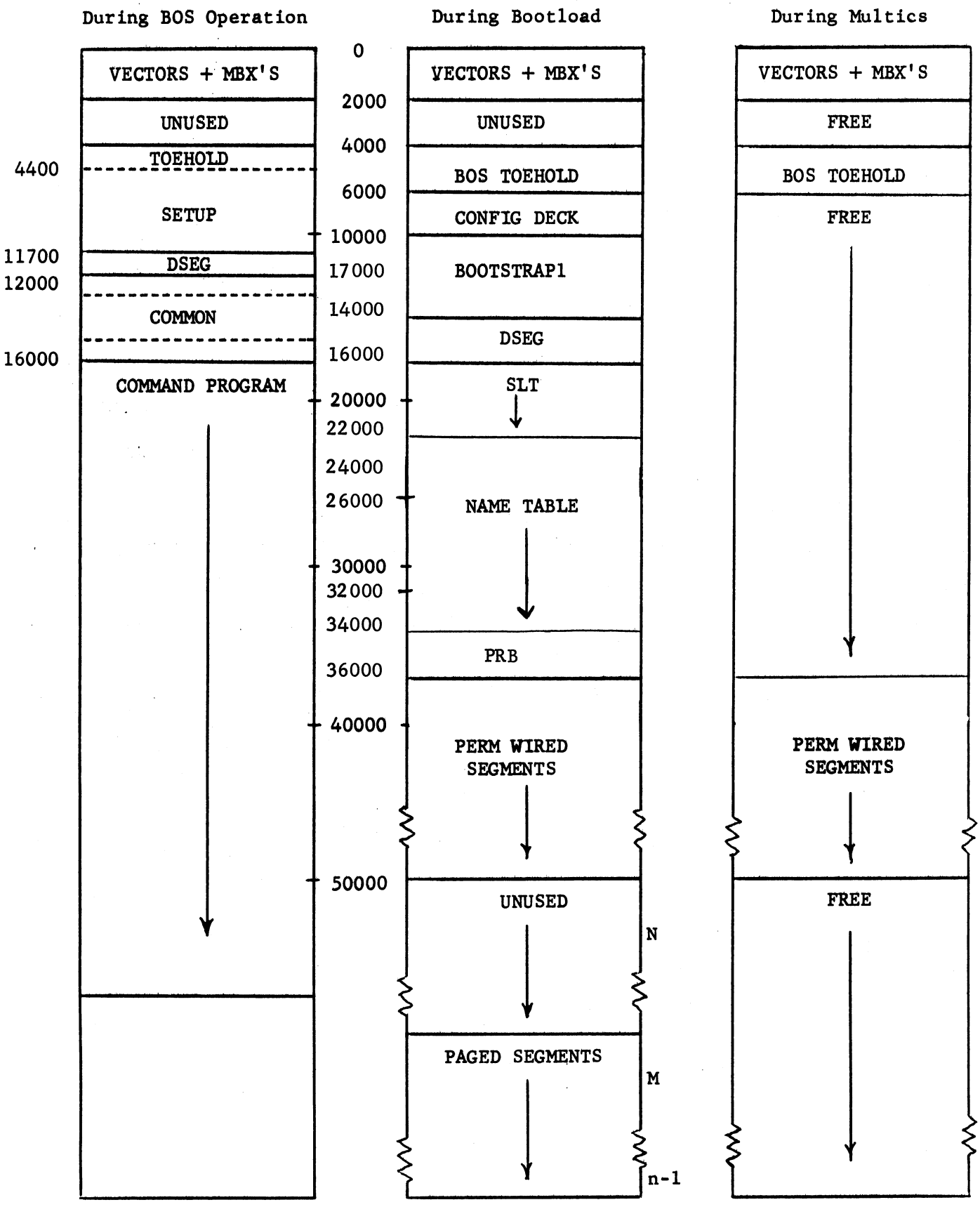
After initialization certain pages are freed (added to the paging pool) and the layout appears as follows:

0	0	AS ABOVE (MBX's + VECTORS)
1	2000	FREE (FOR PAGING)
2	4000	AS ABOVE (BOS)
3→14	6000	FREE (FOR PAGING)
15→N-1	36000	PERM WIRED
N→n-1		FREE (FOR PAGING)

When BOS is running, it utilizes memory as follows:

0	0	AS ABOVE (MBX's + VECTORS)
1	2000	UNUSED
2,3,4	4000	BOS TOEHOLD
	4400	SETUP (BOS MAIN CONTROL)
	11700	DESCRIPTOR SEGMENT
5,6	12000	BOS COMMON AREA
	12000	SAVED MACHINE CONDITIONS
	12400	BOS INTERNAL VARIABLES
	14000	CONFIGURATION DECK
7-22	16000	COMMAND PROGRAM

The following Diagrams are meant to describe the three memory layouts:


During BOS Operation
During Bootload
During Multics
VECTORS + MBX'S
UNUSED
TOEHOLD
SETUP
DSEG
COMMON
COMMAND PROGRAM
4400
11700
12000
16000
0
2000
4000
6000
10000
14000
16000
20000
22000
24000
26000
30000
32000
34000
36000
40000
50000
VECTORS + MBX'S
UNUSED
BOS TOEHOLD
CONFIG DECK
BOOTSTRAP1
DSEG
SLT
NAME TABLE
PRB
PERM WIRED SEGMENTS
UNUSED
PAGED SEGMENTS
N
M
n-1
VECTORS + MBX'S
FREE
BOS TOEHOLD
FREE
PERM WIRED SEGMENTS
FREE