LOADING THE PDS-1

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A boostrap loader is either toggled or hard wired between forty and seventy-seven. The only function of this program is to read a block reading program into the last 100_8 addresses in memory (7700-7777 in a 4K computer).

The bootstrap reader jumps to the start of the block reader immediately after the latter is completely read into memory. As a standard practice the block loader precedes the "object program" on the paper tape, magnetic tape, disk, or whatever. Thus one who is using an auto load sequence need never become aware that two reading programs are used. It seems as though the bootstrap loader is adequate for entering the "object program" into memory.

Many programs will have an "auto start" feature. In this case, a patch of information will follow the object program, which will be read over a portion of the block reader causing it to jump to the start of the object program. This patch destroys that portion of the block reader, but of course, leaves the bootstrap intact.

FOUR DIFFERENT SEQUENCES

1. The fastest way to load the PDS-1 is by means of a photo-electric tape reader. In this sequence the bootstrap reader looks at the PETR only. The block reader thus entered is also receptive to PETR only.

2. Our TTY sequence is structured the same as the PETR sequence, but it ignores the PETR and looks for input from the TTY. Information coming from a remote computer through an acoustical coupler and information stored on magnetic tape can be loaded into the PDS-1 by means of this loading sequence.

3. Reception to the same inputs or series #2 is our "Special Time Sharing" loader. However, it is receptive to a some-what different format. See "Special TTY Reader for Loading PDS-1 via Time-Sharing".

4. The serial bit bootstrap and block loader read informa-tion from a cassette recorder/player at about 1000 baud. The program cassette still consists of a block loader followed by the program in block format.

* USE A BOOTSTRAP WHICH IS COMPATIBLE WITH THE PROGRAM TO BE LOADED

IF THE BOOTSTRAP IS NOT HARD WIRED, TOGGLE IT IN.

WHEN LOADING AN AUTO START DISPLAY PROGRAM, BIT 0 OF DATA SWITCHES SHOULD BE ON.

PHOTOELECTRIC TAPE READER - PUT THE TAPE IN THE PETR, PUT THE PETR ON RUN, AND START THE COMPUTER AT 40 (PETR BOOT-STRAP).

TELETYPE OR MAGNETIC TAPE - START THE COMPUTER AT 40 (TTY BOOTSTRAP), START TTY LOADER OR MAGNETIC TAPE DRIVE.

SPECIAL TTY LOADER - START THE COMPUTER AT 40 (SPECIAL T. S. BOOTSTRAP), RECEIVE ON LINE INFORMATION.

SERIAL BIT LOADER-INSERT PROGRAM CASSETTE IN PLAYER-START PLAYER-WAIT ABOUT 5 SECONDS-START PDS-1 AT 40.

PTR BOOTSTRAP

Octal	Instr	Op
060077	LAC	7
020010	DAC	1
104076	LWC	7
020020	DAC	2
001061	HON	
100011	CAL	
001051	HSF	
010046	JMP	4
002400	HRB	
074075	SAM	7
010045	JMP	4
002400	HSF	
010053	JMP	5.
102400	HSN	
010061	JMP	61
002400	HSF	
010063	JMP	63
001051	HRB	
003003	RAL	3
003003	RAL	3
003002	RAL	2
102400	HSN	
001051	HRB	
010067	JMP	67
120010	HRB	10
102400	DAC	10
001051	HSN	
010063	JMP	63
030020	ISZ	20
010053	CAL	53
110076	JMP	76
000002	I JMP	76
037700		
037677		

TTY BOOTSTRAP

Addr	Octal	Instr	Op
40	060077	LAC	77
41	020010	DAC	10
42	104076	LWC	76
43	020020	DAC	20
44	001032	RCF	
45	100011	CAL	
46	020040	DAC	
47	010046	JMP	46
50	001031	RSF	
51	074075	SAM	75
52	010044	JMP	44
53	002040	RSF	
54	010053	JMP	53
55	001033	RRC	
56	003003	RAL	3
57	003003	RAL	3
60	003002	RAL	2
61	002040	RSF	
62	010061	JMP	61
63	001033	RRC	
64	120010	DAC	10
65	100011	CAL	
66	030020	ISZ	20
67	010053	DAC	
70	110076	JMP	76
71	000000	I JMP	76
72	000000		
73	000000		
74	000000		
75	000000		
76	037700		
77	037677		

SPECIAL TTY BOOTSTRAP

Addr	Octal	Instr	Op
40	001032	RCF	
41	104101	LWC	101
42	020010	DAC	10
43	020020	DAC	20
44	104004	LWC	4
45	020021	DAC	21
46	100011	CAL	
47	020022	DAC	22
50	001033	RSF	
51	002040	CAL	
52	100011	DAC	22
53	010051	JMP	51
54	020023	RRC	
55	074075	AND	75
56	074076	SAM	76
57	010050	JMP	50
60	060023	LAC	23
61	010063	JMP	63
62	024022	XAM	22
63	003003	RAL	3
64	003001	RAL	1
65	050022	IOR	22
66	020022	DAC	22
67	030021	ISZ	21
70	010050	JMP	50
71	120010	DAC	10
72	030020	ISZ	20
73	010044	DAC	44
74	110000	JMP	44
75	000160		
76	000100		
77	000017		

SERIAL BIT BOOTSTRAP

Addr	Octal	Instr	Op
40	060077	LAC	77
41	020010	DAC	10
42	104076	LWC	76
43	020020	DAC	20
44	001014	IOT	14
45	010044	JMP	44
46	001024	CAL	22
47	010024	DAC	21
50	104020	LWC	20
51	020021	DAC	21
52	020021	DAC	22
53	001011	CAL	
54	020022	DAC	22
55	060022	LAC	22
56	003001	RAL	1
57	003001	RAL	1
60	001024	IOT	24
61	010063	JMP	63
62	100004	IAC	
63	020022	DAC	22
64	030021	ISZ	21
65	010054	JMP	54
66	120010	DAC	10
67	030020	ISZ	20
70	010050	JMP	50
71	110076	JMP	76
72	000000	I JMP	76
73	000000		
74	000000		
75	000000		
76	037700		
77	037677		

BOOTSTRAP PRECEDER

The information on bootstrap preceder tape is coded as first contents, second contents,...,$76_{(8)}$th contents ($101_{(8)}$th contents for special TTY bootstrap). Each of these sets of contents uses two tape frames. The first non-zero frame of preceder tape is assumed, by the bootstrap in 40, to be the first frame of the first contents.

The information on a preceder tape is the block format loader and is automatically read into the last $100_{(8)}$ registers of memory.

BLOCK FORMAT TAPE

The information on block format is coded as word count, starting address, contents of first address, contents of next memory location, ..., last contents, sumcheck.

The word count uses only one frame and is the number of sets of contents of the block. The starting address uses two frames as do the contents and sumcheck word. The sumcheck word is the sum of all the contents modulo 77777. The left portions of all two frame quantities are punched first.

BLOCK FORMAT TAPE FOR:

address	contents
7700	001061
7701	100011
7702	023775
7703	037765