



DECUS

PROGRAM LIBRARY

DECUS NO.	8-240
TITLE	END
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SOURCE LANGUAGE	PAL III

20030

10/10/03

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END

DECUS Program Library Write-up

DECUS No. 8-240

ABSTRACT

"END" is a termination program stored on Library System and/or Monitor Unit #8 DECTape, which leaves the memory in a state which allows access to all necessary loaders. Designed primarily for the PDP-8 with TCØ1 and high-speed reader, it may be modified for any configuration using DECTape. Loaders in memory after execution of "END" are as follows:

The Monitor Bootstrap Loader, the TCØ1 Library System Bootstrap Loader, the High Speed RIM Loader and the Binary Loader.

REQUIREMENTS

Storage

The program occupies locations 2ØØ-577 octal and restores locations 76ØØ-7777. S. A. = 223 octal. The program also uses autoindexing registers 16 and 17 of page Ø.

Equipment

The program will operate on a PDP-8/I equipped with a TCØ1 DECTape control unit and from 1 to 8 TU55 DECTape transports, a teletype, and a high-speed paper tape reader.

USAGE

Loading

The program may be loaded with the Binary Loader or Monitor's Load program. To "update" on the TCØ1 DECTape Library System the core space is <200,577>; starting address 223. Monitor Saving is as follows:

SAVE END! 200-577; 223 (CR)

Calling Sequence

Whether Monitor or TCØ1 Library System is used, the program is called by typing "END" while either program is in the monitoring mode.

Switch Settings

The program when executed types out the following message and then the computer halts:

SA:	7756	RIM
SA:	7777	BIN
SA:	200	MONITOR
SA:	7600	LIBSYS

This message indicates the switch settings for starting up any one of the given programs.

Entry

END is started up automatically when entered from TC01 Library System or Monitor. However, if entered through the BINARY Loader the starting address is 223 octal.

RESTRICTIONS

None.

DESCRIPTION

Discussion

The program is basically the Monitor Bootstrap Loader, a move routine, a message routine and a page of data. The data is the top page of memory, with the desired loaders, moved down to page 2 (locations ~~400~~-577 octal). When the program is started it restores the top page of memory to the desired form by moving the data from *~~400~~ to *~~7600~~. Then the previously mentioned message is typed on the teleprinter and the computer halts.

NOTE: The binary loader used in this program is not compatible with Digital-8-2-U or DEC-08-LBAA-D. It is a DEC unidentified binary loader used with the TC01 Library System, Digital-8-7-S.

/RPC-SYS-008-0-END
 /SYSTEM TERMINATION ROUTINE
 /RESTORES LOADERS & BOOTSTRAPS
 /AUGUST 29, 1969
 /ELMER J BOURQUE
 FROM=16
 TO=17
 *200

0200	7600	BEG,	7600
0201	1216		TAD MVB
0202	4210		JMS DO
0203	1217		TAD M201
0204	3620		DCA I CA
0205	1222		TAD RF
0206	4210		JMS DO
0207	5600		JMP I BEG
0210	0000	DO,	0
0211	6766		DTXA DTCA
0212	3621		DCA I WC
0213	6771		DTSF
0214	5213		JMP .-1
0215	5610		JMP I DO
0216	0600	MVB,	0600
0217	7577	M201,	-201
0220	7755	CA,	7755
0221	7754	WC,	7754
0222	0220	RF,	0220
0223	7600	START,	7600
0224	1216		TAD MVB
0225	6766		DTXA DTCA
0226	7200		CLA
0227	6046		TLS
0230	1260		TAD C377
0231	3016		DCA FROM
0232	1261		TAD C7577
0233	3017		DCA TO
0234	1223		TAD START
0235	3262		DCA COUNT
0236	1416		TAD I FROM
0237	3417		DCA I TO
0240	2262		ISZ COUNT
0241	5236		JMP .-3
0242	1263		TAD LETTRS
0243	3016		DCA FROM
0244	1264		TAD MLETRS
0245	3262		DCA COUNT
0246	1416	TYPE,	TAD I FROM
0247	6041		TSF
0250	5247		JMP .-1
0251	6046		TLS
0252	7200		CLA
0253	2262		ISZ COUNT
0254	5246		JMP TYPE
0255	6771		DTSF
0256	5255		JMP .-1
0257	7402		HLT

/MONITOR BOOTSTRAP LOADER

/REWIND DECTAPE

/SET UP TO MOVE THE
 /LOADERS ON PAGE 2 TO PAGE 31

/MESSAGE TYPEOUT ROUTINE

0260	0377	C377,	377
0261	7577	C7577,	7577
0262	0000	COUNT,	0
0263	0264	LETTRS,	MLETRS
0264	7670	MLETRS,	7670
0265	0215		215/CR
0266	0212		212/LF
0267	0212		212/LF
0270	0212		212/LF
0271	0212		212/LF
0272	0212		212/LF
0273	0323		323/S
0274	0301		301/A
0275	0272		272/:
0276	0240		240/
0277	0267		267/7
0300	0267		267/7
0301	0265		265/5
0302	0266		266/6
0303	0240		240/
0304	0322		322/R
0305	0311		311/I
0306	0315		315/M
0307	0215		215/CR
0310	0212		212/LF
0311	0323		323/S
0312	0301		301/A
0313	0272		272/:
0314	0240		240/
0315	0267		267/7
0316	0267		267/7
0317	0267		267/7
0320	0267		267/7
0321	0240		240/
0322	0302		302/B
0323	0311		311/I
0324	0316		316/N
0325	0215		215/CR
0326	0212		212/LF
0327	0323		323/S
0330	0301		301/A
0331	0272		272/:
0332	0240		240/
0333	0240		240/
0334	0262		262/2
0335	0260		260/0
0336	0260		260/0
0337	0240		240/
0340	0315		315/M
0341	0317		317/0
0342	0316		316/N
0343	0311		311/I
0344	0324		324/T
0345	0317		317/0
0346	0322		322/R
0347	0215		215/CR

MESSAGE

0350	0212	212/LF
0351	0323	323/S
0352	0301	301/A
0353	0272	272/:
0354	0240	240/
0355	0267	267/7
0356	0266	266/6
0357	0260	260/0
0360	0260	260/0
0361	0240	240/
0362	0314	314/L
0363	0311	311/I
0364	0302	302/B
0365	0323	323/S
0366	0331	331/Y
0367	0323	323/S
0370	0215	215/CR
0371	0212	212/LF
0372	0212	212/LF
0373	0212	212/LF
0374	0212	212/LF

/

/

/

/LAST PAGE IN MEMORY
 /RIM, BINARY AND BOOTSTRAP LOADERS
 *400

0400	6224	RIF	/TC01 BOOTSTRAP LOADER
0401	6774	DTLB	
0402	1221	TAD REVS	
0403	4213	JMS DWAIT	
0404	1222	TAD ADDR	
0405	3355	DCA MAC	
0406	1223	TAD READF	
0407	4213	JMS DWAIT	
0410	0000	0	
0411	0000	0	
0412	0000	0	
0413	0000	DWAIT, 0	
0414	6766	DTCA DTXA	
0415	3354	DCA WCOUNT	
0416	6771	DTSF	
0417	5216	JMP .-1	
0420	5613	JMP I DWAIT	
0421	0600	REVS, 0600	
0422	7577	ADDR, 7577	
0423	0220	READF, 0220	
0424	0000	0	

0425	0000	BEGG,	0	/BINARY LOADER
0426	7100		CLL	
0427	4344		JMS READ	/GET A CHARACTER
0430	1341		TAD M377	/TEST FOR 377
0431	7630		SZL CLA	
0432	5227		JMP --3	/YES
0433	1346		TAD CHAR	/NO, TEST FOR CODE
0434	0251		AND MASK	/TYPES
0435	1330		TAD MEMFLD+3	
0436	7510		SPA	
0437	2225		ISZ BEGG	/DATA OR ORIGIN
0440	7750		SPA SNA CLA	
0441	5625		JMP I BEGG	/DATA, ORIGIN, OR L/T
0442	1346		TAD CHAR	/FIELD SETTING
0443	0247		AND FMASK	
0444	1250		TAD CHANGE	
0445	3347		DCA MEMTEM	
0446	5226		JMP BEGG+1	/CONTINUE INPUT
0447	0070	FMASK,	70	
0450	6201	CHANGE,	CDF	
0451	0300	MASK,	300	
0452	6031	LOR,	KSF	/WAIT FOR FLAG
0453	5252		JMP --1	
0454	6036		KRB	
0455	3346		DCA CHAR	
0456	1346		TAD CHAR	
0457	5744		JMP I READ	
0460	6011	HIR,	RSF	
0461	5260		JMP --1	
0462	6016		RRB RFC	
0463	5255		JMP LOR+3	
0464	4332	BEND,	JMS ASSEMB	
0465	7041		CIA	
0466	1350		TAD CHKSUM	
0467	7402		HLT	
0470	6032	BEGIN,	KCC	
0471	6014		RFC	
0472	6224		RIF	
0473	1250		TAD CHANGE	
0474	3347		DCA MEMTEM	/SAVE FIELD INSTRUCTION
0475	7604		LAS	
0476	7700		SMA CLA	
0477	1343		TAD HIRI	
0500	1342		TAD LORI	
0501	3345		DCA READ+1	
0502	4225		JMS BEGG	
0503	5302		JMP --1	/IGNORE LEADER
0504	3350	GO,	DCA CHKSUM	
0505	1347		TAD MEMTEM	
0506	3325		DCA MEMFLD	
0507	1346		TAD CHAR	
0510	3351		DCA WORD1	
0511	4344		JMS READ	
0512	3352		DCA WORD2	
0513	4225		JMS BEGG	/LOOK AHEAD
0514	5264		JMP BEND	/TRAILER, END
0515	4332		JMS ASSEMB	
0516	7420		SNL	
0517	5325		JMP MEMFLD	
0520	3376		DCA ORIGIN	

0521	1351	CHEX,	TAD WORD1
0522	1352		TAD WORD2
0523	1350		TAD CHKSUM
0524	5304		JMP GO
0525	0000	MEMFLD,	0
0526	3776		DCA I ORIGIN
0527	2376		ISZ ORIGIN
0530	7600		7600
0531	5321		JMP CHEX
0532	0000	ASSEMB,	0
0533	1351		TAD WORD1
0534	7106		CLL RTL
0535	7106		CLL RTL
0536	7106		CLL RTL
0537	1352		TAD WORD2
0540	5732		JMP I ASSEMB
0541	7401	M377,	7401
0542	5252	LORI,	5252
0543	0006	HIRI,	6
0544	0000	READ,	0
0545	0000		0
0546	0000	CHAR,	0
0547	0000	MEMTEM,	0
0550	0000	CHKSUM,	0
0551	0000	WORD1,	0
0552	0000	WORD2,	0
0553	0000		0
0554	0000	WCOUNT,	0
0555	0000	MAC,	0
0556	6014	BEGUN,	RFC
0557	6011		RSF
0560	5357		JMP .-1
0561	6016		RRB RFC
0562	7106		CLL RTL
0563	7006		RTL
0564	7510		SPA
0565	5374		JMP DEP
0566	7006		RTL
0567	6011		RSF
0570	5367		JMP .-1
0571	6016		RRB RFC
0572	7420		SNL
0573	3776		DCA I ORIGIN
0574	3376	DEP,	DCA ORIGIN
0575	5357		JMP BEGUN+1
0576	0000	ORIGIN,	0
0577	5270		JMP BEGIN

/HIGH SPEED RIM LOADER

ADDR 0422
ASSEMB 0532
BEG 0200
BEGG 0425
BEGIN 0470
BEGUN 0556
BEND 0464
CA 0220
CHANGE 0450
CHAR 0546
CHEX 0521
CHKSUM 0550
COUNT 0262
C377 0260
C7577 0261
DEP 0574
DO 0210
DWAIT 0413
FMASK 0447
FROM 0016
GO 0504
HIR 0460
HIRI 0543
LETTRS 0263
LOR 0452
LORI 0542
MAC 0555
MASK 0451
MEMFLD 0525
MEMTEM 0547
MLETRS 0264
MVB 0216
M201 0217
M377 0541
ORIGIN 0576
READ 0544
READF 0423
REVS 0421
RF 0222
START 0223
TO 0017
TYPE 0246
WC 0221
WCOUNT 0554
WORD1 0551
WORD2 0552