## NAME

romboot – special ROM bootstrap loaders

## DESCRIPTION

To bootstrap programs from various storage media, standard DEC® ROM bootstrap loaders are often used. However, such standard loaders may not be compatible with UNIX bootstrap programs or may not exist on a particular system. Thus, special bootstrap loaders were designed which may be cut into a programmable ROM (M792 read-only-memory) or manually toggled into memory.

Each program is position-independent, that is, it may be located anywhere in memory. Normally, it is loaded into high core to avoid being overwritten. Each reads one block from drive 0 into memory starting at address 0 and then jumps to address 0. To minimize the size, each assumes that a system INIT was generated prior to execution. Also, the address of one of the device registers is used to set the byte count register or word count register. In each case, this will read in at least 256 words, which is the maximum size of bootstrap programs.

On disk devices, block 0 is read, on tape devices, one block from the current position. Thus, the tape should be positioned at the load point (endzone if DECtape) prior to booting. Also, the standard DEC bootstrap loader for magnetic tape may be emulated by positioning the tape at the load point and executing the bootstrap loader twice.

By convention, on PWB 11/45 systems, address 773 000 is the start of a tape bootstrap loader, and 773 020 the start of a disk bootstrap loader. The actual loaders used depend on the particular hardware configuration.

## SEE ALSO

70boot(VIII), unixboot(VIII)

TC11 – DEC	TC11 – DECtape							
012700	1	mov	\$tcba,r0					
177346								
010040		mov	r0,-(r0)	/use tc addr for wc				
012740		mov	\$3,–(r0)	/read bn forward				
000003								
105710	1:	tstb	(r0)	/wait for ready				
002376		bge	1b					
112710		movb	\$5,(r0)	/read forward				
000005								
105710	1:	tstb	(r0)	/wait for ready				
002376		bge	1b	•				
005007		clr	pc	/transfer to zero				
			•					
TU10 – Mag	netic Tape							
012700	_	mov	\$mtcma,r0					
172526								
010040		mov	r0,-(r0)	/use mt addr for bc				
012740		mov	\$60003,-(r0)	/read, 800 bpi, 9 track				
060030				-				
105710	1:	tstb	(r0)	/wait for ready				
002376		bge	1b	•				
005007		clr	pc	/transfer to zero				
			•					
TU16 – Mag	netic Tape							
_	-							
012700		mov	\$mtwc,r0					
012700 172442		mov	\$mtwc,r0					
		mov		/set 800 bpi, PDP format				
172442			\$mtwc,r0 \$1300,30(r0)	/set 800 bpi, PDP format				
172442 012760				/set 800 bpi, PDP format				
172442 012760 001300			\$1300,30(r0)	/set 800 bpi, PDP format /use mt addr for wc				
172442 012760 001300 000030		mov	\$1300,30(r0) r0,(r0)	-				
172442 012760 001300 000030 010010 012740		mov	\$1300,30(r0)	/use mt addr for wc				
172442 012760 001300 000030 010010 012740 000071	1:	mov	\$1300,30(r0) r0,(r0) \$71,-(r0)	/use mt addr for wc /read				
172442 012760 001300 000030 010010 012740	1:	mov mov mov	\$1300,30(r0) r0,(r0)	/use mt addr for wc				
172442 012760 001300 000030 010010 012740 000071 105710	1:	mov mov mov	\$1300,30(r0) r0,(r0) \$71,-(r0) (r0) 1b	/use mt addr for wc /read				
172442 012760 001300 000030 010010 012740 000071 105710 002376	1:	mov mov tstb bge	\$1300,30(r0) r0,(r0) \$71,-(r0) (r0)	/use mt addr for wc /read /wait for ready				
172442 012760 001300 000030 010010 012740 000071 105710 002376 005007		mov mov tstb bge	\$1300,30(r0) r0,(r0) \$71,-(r0) (r0) 1b	/use mt addr for wc /read /wait for ready				
172442 012760 001300 000030 010010 012740 000071 105710 002376		mov mov tstb bge	\$1300,30(r0) r0,(r0) \$71,-(r0) (r0) 1b	/use mt addr for wc /read /wait for ready				
172442 012760 001300 000030 010010 012740 000071 105710 002376 005007		mov mov tstb bge clr	\$1300,30(r0) r0,(r0) \$71,-(r0) (r0) 1b pc	/use mt addr for wc /read /wait for ready				
172442 012760 001300 000030 010010 012740 000071 105710 002376 005007 RK05 - DEC		mov mov tstb bge clr	\$1300,30(r0) r0,(r0) \$71,-(r0) (r0) 1b pc	/use mt addr for wc /read /wait for ready				
172442 012760 001300 000030 010010 012740 000071 105710 002376 005007 RK05 - DEC 012700 177412		mov mov tstb bge clr	\$1300,30(r0)  r0,(r0) \$71,-(r0)  (r0) 1b pc  \$rkda,r0	/use mt addr for wc /read /wait for ready				
172442 012760 001300 000030 010010 012740 000071 105710 002376 005007 RK05 - DEC 012700 177412 005040		mov mov tstb bge clr mov	\$1300,30(r0)  r0,(r0) \$71,-(r0)  (r0) 1b pc  \$rkda,r0  -(r0) r0,-(r0)	/use mt addr for wc /read /wait for ready /transfer to zero				
172442 012760 001300 000030 010010 012740 000071 105710 002376 005007 RK05 - DEC 012700 177412 005040 010040		mov mov tstb bge clr mov clr mov	\$1300,30(r0)  r0,(r0) \$71,-(r0)  (r0) 1b pc  \$rkda,r0 -(r0)	/use mt addr for wc /read  /wait for ready  /transfer to zero  /use rk addr for wc				
172442 012760 001300 000030 010010 012740 000071 105710 002376 005007 RK05 - DEC 012700 177412 005040 010040 012740		mov mov tstb bge clr mov clr mov	\$1300,30(r0)  r0,(r0) \$71,-(r0)  (r0) 1b pc  \$rkda,r0  -(r0) r0,-(r0)	/use mt addr for wc /read  /wait for ready  /transfer to zero  /use rk addr for wc				
172442 012760 001300 000030 010010 012740 000071 105710 002376 005007 RK05 - DEC 012700 177412 005040 010040 012740 000005	C pack	mov mov tstb bge clr mov clr mov mov tstb	\$1300,30(r0)  r0,(r0) \$71,-(r0)  (r0) 1b pc  \$rkda,r0 -(r0) r0,-(r0) \$5,-(r0)	/use mt addr for wc /read  /wait for ready  /transfer to zero  /use rk addr for wc /read				
172442 012760 001300 000030 010010 012740 000071 105710 002376 005007 RK05 - DEC 012700 177412 005040 010040 012740 000005 105710	C pack	mov mov tstb bge clr mov clr mov mov	\$1300,30(r0)  r0,(r0) \$71,-(r0)  (r0) 1b pc  \$rkda,r0  -(r0) r0,-(r0) \$5,-(r0)  (r0)	/use mt addr for wc /read  /wait for ready  /transfer to zero  /use rk addr for wc /read				

RP03 – Disk I	Pack					
012700		mov	\$rpmr,r0			
176726						
005040		clr	-(r0)			
005040		clr	-(r0)			
005040		clr	-(r0)			
010040		mov	r0,-(r0)	/use rp addr for wc		
012740		mov	\$5,–(r0)	/read		
000005						
105710	1:	tstb	(r0)	/wait for ready		
002376		bge	1b			
005007		clr	pc	/transfer to zero		
RP04 – Disk Pack						
012700		mov	\$rpcs1,r0			
176700						
012720		mov	\$21,(r0)+	/read-in preset		
000021						
012760		mov	\$10000,30(r0)	/set to 16-bits/word		
010000						
000030						
010010		mov	r0,(r0)	/use rp addr for wc		
012740		mov	\$71,–(r0)	/read		
000071						
105710	1:	tstb	(r0)	/wait for ready		
002376		bge	1b			
005007		clr	pc	/transfer to zero		