

SDVCINT  
STORAGE ALLOCATION.

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ADDRESS LENGTH BINARY CONTROL CARDS.

0	1261	INENT	SDVCINT
	1261	ENIN	

ENTRY POINTS.

I.SDVCOP = 0 I.SDVC = 7 SDVCGPT = 227 SDVCPNT = 236

EXTERNAL SYMBOLS.

E.ECS I.LOCK S.MASTR DINTQ EVENT1 HANG1 INTSCR I.WAIT

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INENT SDVCINT

\*  
\*  
\*  
\*  
**ECS READ AND WRITE MACROS**

<b>ECS</b>	<b>ExT</b>	<b>E_ECS</b>
	<b>MACRO</b>	<b>CNT</b>
	<b>R_E</b>	<b>CNT</b>
	<b>R_J</b>	<b>E_ECS</b>
	<b>ENDM</b>	
<b>ECS</b>	<b>MACRO</b>	<b>CNT</b>
	<b>W_E</b>	<b>CNT</b>
	<b>H_J</b>	<b>E_ECS</b>
	<b>ENDM</b>	

		EXT	I_LOCK
		ENTRY	I_SDVCP
0	5110000000 X 1:611	I_SDVCP	I_LOCK
1	5160000000 X 0311000000	S <sub>A1</sub>	B <sub>Y6</sub>
2	5110000000 X 0311000000	S <sub>A2</sub>	=XI_WAIT
3	0100000014 *	N <sub>7</sub>	X1=0
4	0100000066 *	R <sub>i</sub>	SCANPPS
5	13777	R <sub>j</sub>	GETEVNT
6	5170000000 A 0200000000	B <sub>Y7</sub>	X7-X7
		S <sub>A7</sub>	E_ECS
		J <sub>6</sub>	0

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		ENTRY EXT		I, S,MASTR
7	000000000000000000157 *	VFD		6n/SDVCREQ
10	0000000000000000003171 *	VFD		6n/SDVCRSP
11	000000000000000000600 X	VFD		A0/S,MASTR
12	000000000000000000234 *	VFD		6n/TPBUF TAPE BUFFER
13	0000000000000000001240 *	VFD		6n/SLOWP SLOW PERIPH

## S DEVICE, PPU REQUEST SCAN

## SETS UP REGISTERS AS FOLLOWS

			X1	ACTION	
			B2	WORD COUNT	
			B3	POSITION IN CURRENT BUFFER	
			B4	DEVICE NUMBER	
14	SCANPPS	BxSZ	I		
15	7160000234 +	Sv6	SaUFFST		
	5160000231 +	Sa6	SaUFFPNT	INITIALIZE SCAN	
16	5110000237 +	SCANPPSA	Sa1	SRUFFPNT	
	5221777776	Sa2	X1=1		
17	0302000062 +	Zq	Xp,SCANPPSV	NO REQUEST IN THIS BUFFER	
			Hx0	60=12	
			Bx1	=X0*X2	GET ACTION
20	41214		Ax2	12	
	15320		Bx3	=X0*X2	
			Sa2	X3	SET WORD COUNT
			Ax2	12	
21	15320		Bx3	=X0*X2	
	63330		Sa3	X3	SET POSITION IN CURRENT BUFFER
			Ax2	12	
			Bx3	=X0*X2	
22	03430		Sa4	X3	GET DEVICE NUMBER
	0100000121 +	Zr		GETSDVC	
23	20173		Lx1	5q	
	0321000020 <	Px1	X1,SCANPPSA	NO COPY ECS TO CM	
24	0100000146 +	Rx1	SETMOVE		
25	0115000000	RpxCS	Sq	COPY ECS TO CM ( 2**0 )	
26	20173		Lx1	5q	
	0321000031 <	Px1	X1,SCANPPSC	NO COPY CM TO ECS	
27	0100000146 +	Rx1	SETMOVE		
30	0125000000	RpxCS	Sq	COPY CM To ECS ( 2**1 )	
31	20173		Lx1	5q	
	0321000044 <	Px1	X1,SCANPPSD	NO SEND RESPONSE TO USER	
32	5120000222 +	Sa2	REQDONE	SEND RESPONSE TO USER	
	7262000001	Sx6	X2+1	AND DO NOTHING MORE FOR PPU ( 2**2 )	
33	54620	Sa6	A2	BUMP COMPLETED REQUEST COUNT	
	5120000221 <	Sx6	REQLEFT		
34	7262777776	Sa6	X2+1		
	54620	Sa2	A2	DECREMENT REQUEST COUNT	
35	5124000171 +	Sa2	SNCRSP+B4	PICK UP PPS RESPONSE TO REQUEST	
	0332000050 +	Nq	Xp,SCANPPSW	TERMINATE THIS REQUEST, FLIP ERROR BIT	
36	0306000052 +	Zr	X6,SCANPPSX	TERMINATE THIS REQUEST	

37	5130000224 *	S <sub>A2</sub>	BUFPOS	
	36623	S <sub>A3</sub>	BUFSZ	
	36336	I <sub>V6</sub>	X <sub>2</sub> +X <sub>3</sub>	TENTATIVE NEW BUFFER POSITION
40	5120000213 *	I <sub>V3</sub>	X <sub>9</sub> +X <sub>6</sub>	FIRST POSITION BEYOND NEW BUFFER
	37223	S <sub>A2</sub>	FILESZ	
41	332000042 *	I <sub>V2</sub>	X <sub>2</sub> +X <sub>3</sub>	COMPUTE SPACE IN FILE BEYOND NEW BUFFER
	5160000223 *	N <sub>A</sub>	X <sub>2</sub> ,*+1	DO NOT ADVANCE BUFFER IF NO ROOM
		S <sub>A6</sub>	BUFPOS	ADVANCE BUFFER POSITION
42	5120000226 *	S <sub>A2</sub>	ACTION	
	1.622	B <sub>V6</sub>	X <sub>2</sub>	
43	516400157 *	S <sub>A6</sub>	SDVCREQ+B4	REPEAT REQUEST TO PPU
	0200000060 *	J <sub>P</sub>	SCANPPSY	
44	20173	SCANPPSD	L <sub>V1</sub>	5 <sub>C</sub>
	4321000060 *		P <sub>L</sub>	X <sub>1</sub> ,SCANPPSY NO INITIAL HANG
45	6170000060 *	S <sub>A7</sub>	SCANPPSY	
	5110000216 *	S <sub>A1</sub>	PMOT	DO INITIAL HANG ( 2**3 )
46	5120000214 *	S <sub>A2</sub>	E REQ	
	5130000203 *	S <sub>A3</sub>	SDVCADE	
47	0200000006 *	J <sub>P</sub>	HANGI	
50	5120000220 *	SCANPPSW	S <sub>A2</sub>	EFLAG
	43601		M <sub>V6</sub>	I
	13621	B <sub>V6</sub>	X <sub>2</sub> =X <sub>1</sub>	FLIP E FLAG
51	5160000220 *	S <sub>A6</sub>	EFLAG	
52	6100000131 *	SCANPPSX	R <sub>J</sub>	PUTSDVC
53	43060		M <sub>YU</sub>	Gn=12
	5120000225 *	S <sub>A2</sub>	SEQNUMB	
54	5134000171 *	S <sub>A3</sub>	SDVCRSP+B4	
	15020	B <sub>V2</sub>	*X <sub>0</sub> *X <sub>2</sub>	
	12723	B <sub>V7</sub>	X <sub>2</sub> +X <sub>3</sub>	
55	5110000222 *	S <sub>A1</sub>	REQDONE	
	15110	B <sub>V1</sub>	*X <sub>0</sub> *X <sub>1</sub>	
	20164	L <sub>V1</sub>	S <sub>A</sub>	
56	12717	B <sub>X7</sub>	X <sub>1</sub> *XT	COMPLET RESPONSE TO BE SENT TO USER
	0100000136 *	R <sub>J</sub>	RSPNSE	SEND RESPONSE TO USER
57	0200000061 *	J <sub>P</sub>	SCANPPSZ	
60	6100000131 *	SCANPPSY	R <sub>J</sub>	PUTSDVC
			*	
61	5110000231 *	SCANPPSZ	S <sub>A1</sub>	SRUFPN
	13666		B <sub>V6</sub>	X <sub>2</sub> =X <sub>6</sub>
62	5261777776	S <sub>A6</sub>	X <sub>1</sub> =1	
63	5211777775	S <sub>A4</sub>	X <sub>1</sub> =2	
	10611	B <sub>V6</sub>	X <sub>1</sub>	
64	5160000231 *	S <sub>A6</sub>	SRUFPN	
	0301000014 *	Z <sub>R</sub>	X <sub>1</sub> ,SCANPPS	
65	0200000016 *	J <sub>P</sub>	SCANPPSA	

## S DEVICE, GET EVENTS

		EXT	DINTQ
66		GETEVNT	BqSZ
67	5110000227 *	GETEVNT1	Ss1
	0100000000 X		R,I
70	1302000066 *		ZP
		X2+GETEVNT	NO EVENTS, SO EXIT
71	5100000204 *	Bv0	X2
72	130000023	Sa0	SNVCPROC
73	10622	RFCs	SNVCPSZ
	5160000203 *	By6	X2
74	5110000211 *	Sa6	SOVCADR
	5120000220 *	Sa1	EVNTW2
75	13212	Bx2	PICK UP 2 NO EVENT WD
	0332000115 *	Nr	EFLAG
	63060	Mv0	X1-X2
76	15610	By6	X2+GETEVNT2 ✓REFUSE REQUEST FOR BAD ERROR RECOVERY
	0306000115 *	Zq	BIT
			6n=12
			=X0*X1
			X2+GETEVNT2 ✓REFUSE REQUEST FOR ZERO ACTION
77	5160000224 *	By6	=X0*X6
	21114	Sa6	REGIN SPLITTING UP REQUEST AND
	15610	Av1	SAVE DATA FROM REQUEST
100	5160000223 *	Sa6	I2
	21114	Ax1	=X0*X1
	15610	By6	BUFPoS
101	5160000226 *	Sa6	I2
	21114	Av1	=X0*X1
	15610	By6	BUFSZ
102	1316000103 *	Nt	I2
	7160000003	Sv6	=X0*X1
103	43766	GETEVNT3	I2
	13647	Mv7	ON COUNT OF ZERO ASSUME 1
	51A0000221 *	By6	MAX COUNT WILL BE 1000
104	21114	Sa6	=X7*X6
	43767	Av1	REQLEFT
	15610	Mv0	I2
105	5140000225 *	By6	6n=11
	13666	Sa6	=X0*X1
106	5160000229 *	By6	SEQNUMS
	5110000223 *	Sa6	X6=X6
107	5120000213 *	Sa2	REQDONE
	37312	Iy3	BUFPoS . GET BUFFER POSITION
110	0323000115 *	PL	FILESZ . GET FILE SIZE
111	5110000224 *	GETEVNT4	X1=X2 . NR IF OK
	10611	Sa1	X2+GETEVNT2 . RETURN ERROR IF POS>FSIZE
112	5120000217 *	By6	ACTION . RETREIVE ACTION
	5262000157 *	Sa2	X1
113	9100000131 *	Sa6	DVCNUMB . GET DEVICE NUMBER
		ZP	X2+SDVCREQ . SEND TO PROPER PPU
			PUTSDVC

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114	0200000067 +		Jo	GETEVNT1	
115	5110000211 +		GETEVNT2	S1	FVNTW2 . GET EVENT WORD AGAIN FOR ABOVE CODE
		43013		Mx0	11 REFUSE REQUEST FOR 0 ACT OR BAD ERR
				Lv0	40=1
116	411701	20073		Bx7	X0**X1 GET SEQ NUMBER
	20714			Lv7	12 POSITION SEQ NUMBER
	12707			Bx7	X0+X7 INSERT 37777B
117	51000000134 +			RJ	RSPNSE
120	5200000067 +		Jo	GETEVNT1	

## GET PART 2 OF A PSEUDO PROCESS

S DVC NUMB IN X3  
 LEAVES ADDRESS P PROC IN SDVCAADR  
 DESTROYS A0, X0, A2, X2, A3, X3

121		GETSDVC	BxS2	1
122	5120000230 *		Sx2	SDVCPNT
	36023		Ix0	Xp+X3
123	5100000203 *		Sx0	SDVCAADR
124	5110000001		RFCS	1 GET ADDRESS OF THE PSEUDO PROC
125	5120000201 *		Sx2	SDVCAADR
	7100000006		Sv0	SDVCPSZ1
126	36002		Ix0	X6+X2 COMPUTE ADDRESS OF PART 2
	5100000212 *		Sx0	SDVCPT2
127	5110000015		RFCS	SDVCPSZ2 READ IN THE DATA
130	5200000121 *		Jp	GETSDVC

REPLACE PART 2 OF A PSEUDO PROCESS  
 ASSUMES ADDRESS OF THE P PROC IN SDVCAADR

DESTROYS A0, X0, A2, X2

131		PUTSDVC	BxS2	1
132	5120000203 *		Sx2	SDVCAADR
	7100000006		Sv0	SDVCPSZ1
133	36002		Ix0	X6+X2
	5100000212 *		Sx0	SDVCPT2
134	5120000015		RFCS	SDVCPSZ2
135	5200000131 *		Jp	PUTSDVC

SEND RESPONSE IN X7 TO USER AND REHANG  
DESTROYS ALL REGISTERS

		EXT	EVENT1,HANG1
		EXT	INTSCR
136		RSPNSE	B6SZ
137	6170000143 +		Sr7
	5150000216 +		PMS
140	10655		X6
	5110000215 +		ECRSP
141	6160777776		=1
	6110000000 X		WHERE TO WTOPR RETURNS
142	0200000000 X		INTSCR
			EVENT1
143	6170000134 +	RSPNSE1	Sr7
	5110000216 +		RSPNSE
144	5120000214 +		Sa1
	5130000203 +		PMOT
145	0200000000 X		Sa2
			EOREQ
			SDVCADDR
			HANG1

## PREPARE FOR ECS MOVE

WILL SET RS TO CORRECT COUNT  
YOU AD TO POSITIONS OF MOVE

DESTROYS B5, A0, X0, A2, X2, A3, X3

146	SETMOVE	B6SZ	1	
147 5120000231 +		Sz2	SzFPTN	
53020		Sz0	X2	SET STARTING CM ADDRESS
150 5120000222 +		Sz2	BUFSZ	GET POSITION WITHIN FILE OF CURRENT BUFFER
73023		Sz0	X2+X3	COMPUTE POSITION WITHIN FILE OF MOVE
66520		Sz3	S2	SET B5 TO NOMINAL COUNT
151 5120000224 +		Sz2	BUFSZ	GET BUFFER SIZE
74395		Sz3	S4+B5	NOMINAL NEW POSITION IN BUFFER
37323		Sz0	X2+X3	SPACE LEFT IN BUFFER
152 0323000153 +		P1	X3, SETMOVE1	
62535		Sz5	B5+X3	REDUCE COUNT SO THAT BUFFER NOT OVERRUN
153 73305	SETMOVE1	Sz3	Xn+X5	NOMINAL NEW POSITION IN FILE
5120000213 +		Sz2	FILESZ	
37323		Iy3	X2-X3	COMPUTE SPACE LEFT IN FILE
154 0323000155 +		P1	X3, SETMOVE2	
62535		Sz5	B5+X3	REDUCE COUNT SO THAT FILE NOT OVERRUN
155 5120000212 +	SETMOVE2	Sz2	FILE	GET FILE STARTING ADDRESS
34002		Iy0	A0+X2	COMPUTE ECS STARTING ADDRESS
156 020000014A +		y0	SETMOVE2	

	12	SDVCHMMA	EQU	10	ALLOWS FOR UP TO 10 S DEVICES
157	*	SDVCREQ	BSSZ	SDVCNMB	
171	*	SDVCRSP	BSSZ	SDVCNMR	
	*				
203	*	SDVCADR	BSSZ	*	
	*				
204	*	SDVCPROC	BSSZ	*	
210	*	PVNTV1	BSSZ	*	
211	*	PVNTV2	BSSZ	*	
	*				
212	6	SDVCBSZ1	EQU	*-SDVCPROC	
	*	SDVCPT2	BSS	0	
212	*	FILE	BSSZ	*	
213	*	FILESZ	BSSZ	*	
214	*	SCREQ	BSSZ	*	
215	*	SCRSP	BSSZ	*	
216	*	PMOT	BSSZ	*	
217	*	SDVCNMB	BSSZ	*	
	*				
220	*	SFLAG	BSSZ	*	
221	*	REQLEFT	BSSZ	*	
222	*	REQDONE	BSSZ	*	
223	*	SUPFNS	BSSZ	*	
224	*	SUPSY	BSSZ	*	
225	*	SEQNUMB	BSSZ	*	
226	*	ACTION	BSSZ	*	
	*				
227	15	SDVCBSZ2	EQU	*-SDVCPT2	
234	23	SDVCBSZ	EQU	*-SDVCPROC	
	*				
	*	ENTRY		SDVCQPT,SDVCNP	
	*				
227	*	SDVCQPT	BSSZ	*	
234	*	SDVCNP	BSSZ	*	

## FORM OF A PPU BUFFER FOR S DEVICES

		BSSZ	1	POINTER TO NEXT
		BSSZ	1	PPU REQUEST WORD
	BUF	BSSZ	N	ACTUAL BUFFER, PLACE POINTED
231	SBUFPNT	BSZ	1	USED TO POINT TO CURRENT PPU BUFFER
232	0000000000000001240	VFD	66/SLOWP	
233		BSZ	1	
234	TBUF	BSZ	514	
1236	00000000000000000000	VFD	60/0	
1237		BSZ	1	
1240	SLOWP	BSZ	27B	
234	+ SBUFFST	END	TBUF	
1261		END		
35216	STORAGE USED 6600 ASSEMBLY		381 STATEMENTS 2,402 SECONDS	62 SYMBOLS 181 REFERENCES

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SYMBOLIC REFERENCE TABLE.

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ACTION	226	PROGRAM*	7/11	8/25 S	8/49	13/32 L					
PUFPOS	223	PROGRAM*	7/02	7/09 S	8/28 S	8/45	12/13	13/29 L			
RUFSZ	224	PROGRAM*	7/03	8/31 S	12/17	13/30 L					
DINT0	0	EXTERNAL*	8/08								
DVCNUMB	217	PROGRAM*	8/51	13/24 L							
ECREQ	214	PROGRAM*	7/21	11/19	13/21 L						
ECRSP	215	PROGRAM*	11/12	13/22 L							
EFLAG	221	PROGRAM*	7/25	7/28 S	8/17	13/26 L					
EVENT1	9	EXTERNAL*	11/15								
EVNTW1	210	PROGRAM*	13/12 L								
EVNTW2	211	PROGRAM*	8/18	9/03	13/13 L						
FECS	9	EXTERNAL*	4/11	4/16 S	6/36	6/41	8/14	10/13	10/18	10/31	
FILE	212	PROGRAM*	12/29	13/19 L							
FILESZ	213	PROGRAM*	7/06	8/46	12/24	13/26 L					
GETEVTNT	66	PROGRAM*	4/14	8/06 L	8/09						
GETEVTN1	67	PROGRAM*	8/17 L	9/01	9/10						
GETEVTN2	115	PROGRAM*	8/19	8/22	8/48	9/03 L					
GETEVTN3	103	PROGRAM*	8/34	8/36 L							
GETEVTN4	111	PROGRAM*	8/49 L								
GETSUVC	121	PROGRAM*	8/30	10/08 L	10/18						
HANG1	0	EXTERNAL*	7/23	11/21							
INTSCR	0	EXTERNAL*	11/14								
ILOCK	6	EXTERNAL*	4/17								
ISDVC	7	PROGRAM*	5/04 E	5/07 L							
ISDVCP	0	PROGRAM*	4/15 E	4/07 L							
IWAIT	0	EXTERNAL*	4/09 S								
PMOT	216	PROGRAM*	7/20	11/10	11/18	13/23 L					
PUTSDVC	131	PROGRAM*	7/30	7/43	8/53	10/25 L	10/31				
REQDONE	222	PROGRAM*	6/45	7/36	8/44 S	13/28 L					
REOLEFT	221	PROGRAM*	6/48	8/28 S	13/27 L						
PSPNSE	136	PROGRAM*	7/40	9/05	11/08 L	11/17					
RSPNSE1	143	PROGRAM*	11/19	11/17 L							
SRUFST	224	PROGRAM*	4/12	14/20 D							
SRUFPNT	231	PROGRAM*	6/13 S	6/15	7/45	7/50 S	12/10	14/08 L			
SCANPPS	16	PROGRAM*	6/13	6/21 L	7/51						
SCANPPSA	15	PROGRAM*	6/15 L	7/52							
SCANPPSR	26	PROGRAM*	6/33	6/37 L							
SCANPPSC	31	PROGRAM*	6/38	6/42 L							
SCANPPSD	44	PROGRAM*	6/43	7/16 L							
SCANPPSV	63	PROGRAM*	6/17	7/46 L							
SCANPPS*	80	PROGRAM*	6/52	7/25 L							
SCANPPSK	52	PROGRAM*	6/53	7/30 L							
SCANPPSY	61	PROGRAM*	7/14	7/17	7/19	7/43 L					
SCANPPSZ	61	PROGRAM*	7/41	7/45 L							
SDVCAUR	263	PROGRAM*	7/22	8/15 S	10/11	10/13	10/26	11/20	13/08 L		
SDVCNMB	12		13/12 D	13/04	13/05						
SDVCPNT	230	PROGRAM*	10/09	13/39 E	13/42 L						
SDVCHROC	264	PROGRAM*	8/12	13/11 L	13/15	13/35					
SDVCPSZ	23		8/13	13/35 D							
SDVCPSZ1	5		10/14	10/27	13/15 D						
SDVCPSZ2	15		10/17	10/30	13/34 D						
SDVCPT2	212	PROGRAM*	10/16	10/29	13/17 L	13/34					
SDVCQPT	227	PROGRAM*	8/07	13/39 E	13/41 L						

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SDVCRE0	157	PROGRAM*	5/07	7/13 S	8/52 S	13/04 L
SDVCRSP	171	PROGRAM*	5/08	6/51	7/33	13/05 L
SEQNUM8	225	PROGRAM*	7/32	8/42 S	13/31 L	
SETMOVE	146	PROGRAM*	6/34	6/39	12/09 L	12/31
SETMOVE1	153	PROGRAM*	12/20	12/23 L		
SETMOVE2	155	PROGRAM*	12/26	12/29 L		
SLOWP	1240	PROGRAM*	5/12	14/11	14/17 L	
S <sub>0</sub> MASTR	6	EXTERNAL*	5/09			
TPHUF	234	PROGRAM*	5/01	14/13 L	14/20	