

ABRT	484/OPEN	485-EQU	685/RESOURCE				
ACTIVATE	134/REF	1208/BAL					
ADDPRC	2547/LI	2570-BNEZ					
ADD1	1929/DEF	1957-EQU					
ADJSTCNT	1763/AH	1770/STH	1777/REF				
AF	341/DB 437/DATA 503-SET	342/SET 469/DATA 507-SET	419/DB 471/DATA 507/SET	422/DB 471/DATA	423/SET 498/DB	431/DB 499/DATA	432/SET 500/SET
ALL	419/DB	473/ESTS	620/ESTS	648/ESTS	676/ESTS		
ALLOUT	173/REF	2204/LW					
ALTENT	1233/B	1341/BNEZ	1353-RES				
ALTERR	46/DEF	1357/B	1360-LI				
BA	467/EQU	467/EQU	2529/AI	2529/AI			
BAT	1249/LI	1627/CI	1648/CI	2525/CI			
BISR4	1643-RES	1912/BNE	2142/BNE				
BLCKD:MASK	349/DEF	353-MASK					
BOTTOM	1752/LH	1757/STH	1776/REF				
BRK	484/OPEN	488-EQU	685/RESOURCE				
BUFLAGS	1746/LH	1758/LH	1760/STH	1776/REF			
BUFMASK							

BYPASS	109/REF	1766/CW			
	260-EQU	2213/AI			
C:IDL	1115/LH	1149-DATA			
C:IDLE	137/REF	1149/DATA			
C:IDLES	136/REF	1149/DATA			
C:IDLESW	1149/DATA	1151/REF			
C:IDLEW	1149/DATA	1151/REF			
C:NBPROC	133/REF	2276/MTW			
C:INSP	138/REF	2614/MTW			
C:PROCREQ	132/REF				
C:ITINC	139/REF	1118/LW			
CALINT	257-EQU	2513/CI			
CF	467-EQU	468/DEF			
CHKDELTEL	2224/BAZ	2238-EQU			
CHKDT3	2240/BAZ	2246-BAL			
CHKDT4	2231/BANZ	2243-EQU			
CHKPRC	2558/BAL	2560/BAL	2568-EQU		
CHKPRBT	2034/BAL	2038/BAL	2053/BAL	2076/DEF	2078-EQU
CHSEH	1521/BLZ	1550-LB			

CHSEH1							
CHSEH2	1552-CB	1555/BNE					
CHSEH3	1553/BL	1557-STB					
CHSEO	1559/BNEZ	1564-STB					
CHSE1	40/DEF	855/BAL	1496-STB				
CHSE2	1498/BGE	1500/BAZ	1502/BG	1505-AI		1736/B	
CHSE25	1510-LB	1549/B					
CHSE3	1459/BEZ	1466/BEZ	1524-STB	1551/BEZ			
CHSE4	1523/BNE	1529-CB	1532/BNE				
CHSE5	1530/BGE	1534-STB					
CHSE6	1536/BNEZ	1541-STB					
CHSRT	1506/BG	1571-AI					
CHS1	1508/BL	1545-RES					
	1463/B	1470/B	1528/B	1540/B	1544/B	1563/B	1567/B
	1639-STB						
CK3EX	2125/BAZ	2130-PULL					
CK3UM1	378/GEN	212A-TIPUSHE					
CLK4	2120/DEF	2121-EQU					
CLK4PSD	2119/REF	2123/LW	2128/TIPUSHE	2131/LPSD			
COCIBRK	958/SREF	959/B					

C8C:BRKLTR							
962/SREF	963/B						
C8C:RDCOMP							
960/SREF	961/B						
C8CABRT							
1657/BE	1660/BE	1692-PUSH					
C8C8FF							
125/REF	1695/B						
C3MP							
378-GEN	2127/LPSD						
DASP							
2556/B	2759/DEF	2783-LB					
DDB							
2555/BANZ	2782/BANZ	2785-LB					
DECR							
2766-MTB	2784/BNEZ	2786/B	2788/B				
DELA							
1330/CI							
DELNOASP							
1287/BEZ	1302/BAZ	1308-LW					
DELSTBAD							
1314/BAL	1323-LW						
DELTAGB							
1269/DEF	1270-RES	1333/B					
DELTAGBT							
1281/DEF	1282-RES						
DELTAIN							
1284/BANZ	1311-LI						
DIC							
946/CI	1283/CI	1285/SETST	2253/CI	2554/CI	2726/CI	2781/CI	
2797/CI							
DID*IB							
130/REF	2143/STW						
D8LV							
951/B	952-EQU	957/EQU					
D8L1							
944/BNE	950-STH						

DBSWAP	2358/BEZ	2392/BEZ	2419-LI		
DOUBLEZERO	48/REF	2147/LD	2297/LM		
DBV	2548/BAL	2648/BAL	2787-LB		
DPRGCS	2762/DEF	2776-LB			
DRTEL1	2758/DEF	2763-RSETST			
DTEL	2552/BANZ	2761/DEF	2764-EQU	2775/BANZ	
DTORP	2649/BAL	2774-CI			
E:ABRT	603-ESTS1				
E:AP	663-ESTS	1299/LI			
E:IART	638-ESTS1				
E:ICBA	682-RESOURCE				
E:ICBK	575-ESTS1	578/ERROR	609/SET	1684/LH	1911/CI
E:ICBL	547-ESTS				
E:ICEC	586-ESTS1	609/SET	609/SET		
E:ICFB	682-RESOURCE				
E:ICIC	536-ESTS1				
E:ICRD	529-ESTS				
E:ICUB	554-ESTS1				
E:IDPA					

E:ERR	683-RESOURCE		
E:IC	594-ESTS1	609/SET	609/SET
E:IIP	676-ESTS		
E:IP	522-ESTS	797/LI	1595/AI
E:K8	523-ESTS		
E:INC	655-ESTS1	2603/LI	
E:IND	663-ESTS		
E:INOCR	683-RESOURCE	2001/LI	
E:INQR	681-RESOURCE		
E:INQW	685-RESOURCE		
E:INSYMD	685-RESOURCE		
E:INSYMF	680-RESOURCE		
E:IOCR	678/EQU	679-RESOURCE	
E:IOFF	681-RESOURCE		
E:IGA	603-ESTS1	609/SET	1896/CI
E:IGE	631-ESTS		
E:IGFAC	671-ESTS		
E:IGFI	684-RESOURCE		
	677-ESTS		

EIQMF	523=ESTS						
EIREL	678=EQU	1789/AI					
EISL	624=ESTS						
EISYMD	680=RESOURCE						
EISYMF	679=RESOURCE						
E:UQA	647=ESTS1						
E:UQFAC	684=RESOURCE						
E:WU	616=ESTS1						
EC	484/OPEN	487=EQU	685/RESOURCE				
ECBFBLK	89/SREF	986/BAL					
ENBISR4	1612/BAZ	1631/BL	1637/BNE	1642=ENABLE	1673/BANZ	1677/B	1722/B
	1734/BG	1811/BCR	1816/BEZ	1824/BAZ	1874/BNEZ	2005/EQU	
ER0	95/REF	927/AND	1256/STW				
ERR	484/OPEN	486=EQU	685/RESOURCE				
ESTS	407-CNAME						
ESTS1	408-CNAME						
ESTS2	493-CNAME						
EXECUTE	335=EQU	555/ESTS	576/ESTS	587/ESTS	594/ESTS1	603/ESTS1	640/ESTS
	647/ESTS1	655/ESTS1					
EXU:MASK							

FIIDL	349/DEF	350=MASK				
FCN	1116/LF	1150=DATA				
FLUSH	1599=EQU	1600/LW	1604/STW	1619/LW	1624/STW	
GETJIT	484/OPEN	490=EQU	679/RESOURCE	680/RESOURCE	682/RESOURCE	683/RESOURCE
	684/RESOURCE	1823/CI				
GETPRCPG	39/DEF	1961= PUSH				
GIVEUP	2346/BAL	2596/BAL	2806=EQU			
GIVEUPA	38/DEF	2500/BE	2505/BE	2611=EQU		
GIVEUPB	2651/LI	2701=B				
GIVEUP1	2696=RES	2701/B				
GIVEUP2	2647/BANZ	2650=EQU				
GIVEUP3	2475/BAL	2632=EQU				
GIVEUP4	2631/LI	2640=EQU				
GIVEUP5	2621/BEZ	2626=EQU				
GIVEUP6	2618/BEZ	2625/B	2629=EQU			
GIVEUP7	2210/BAL	2652=BAL				
GIVEUP8	2655/BLE	2673=RES				
GIVEUP9	2688/BG	2693=RES				
GJG1	1966=EQU	1972/BDR				
GJG2						

	1968/BGE	1971-EQU		
GJG3				
	1982-RES	2004/B		
GJG4				
	1978/BCS	2000-RES		
GOEDNGT				
	1090/AW	1091/REF		
GOEXAC				
	2294/BE	2473-EQU		
GOYNUF				
	2304/BLZ	2350-RES	2610/B	
GRANT				
	1593/BEZ	1602/BAZ	2108-EQU	
HANGUP				
	259-EQU	1243/CI		
I				
	341-DB	342/SET	422-DB	423/SET
Is				
	424-DB	425/SET		
IDB				
	1298/BAL	2760/DEF	2798/BANZ	2801-LB
IDLO				
	1096-EQU	1104/BDR		
IDL1				
	1092/BG	1100/BE	1103/BE	1109-EQU
INCR				
	2772-MTB	2800/BNEZ	2802/B	2804/B
INHIBIT				
	261-EQU	946/CI		
INTENT				
	943/CI	957-EQU		
INTENTL				
	956-B	957/EQU		
INTERACTIVE				
	1581/BAL	1583-EQU		
IBCOM1				
	1617-AND	1634/BNE		

I0COM2	1616/BE	1626-LW		
I0COM3	1614/BEZ	1632-MTW		
I0COM4	1620/BGEZ	1622/BANZ	1636-LB	
I0COM5	1623-AND	1638/B		
I0V	2242/BAL	2247/BAL	2637/BAL	2803-LB
I0WAIT:MASK	349/DEF	352-MASK		
I0RCS	2246/BAL	2758/DEF	2792-LB	
I0TEL	2768-LSETRST	2769/EQU		
I0TEL1	2758/DEF	2769-EQU		
I0TEL	2241/BAL	2770-EQU	2791/BANZ	
I0TRP	2636/BAL	2789-LH		
J	498-DB	499/DATA	500/SET	
J:ABC	94/REF	928/LB		
J:ACCN	230/REF	1236/LW	1239/STW	
J:BASE	2428/STW	2469/LW	2470/REF	
J:CTIME	104/REF	995/AW	1222/AW	
J:DELTAT	102/REF	993/LW	1220/LW	
J:IDELTAT	103/REF	996/SW	1011/AW	
J:INTENT				

J:JAC	96/REF	1340/LW				
J:JIT	2092/REF	2093/LB				
J:OVHTIM	101/REF	830/AI	901/LAW	927/AND	1256/STW	2103/LW
J:RNST	97/REF	994/AW	1218/LI	1221/AW		
J:TCB	93/REF	906/LB	924/LB	1248/STB	1318/LB	1321/STB
J:TELFLGS	100/REF	1354/LW	2070/LW			
J:TIMENT	106/REF	1349/STS				
J:UTIMER	99/REF	1227/LW	1232/STW			
JB:FRS	98/REF	1229/LW				
JB:PNR	110/REF	909/LI				
JBPPC	107/REF	2529/AI				
JIC	105/REF	2227/AI	2540/AI			
JIT	1728/AND	1731/AND	2223/CI	2492/LI	2562/LI	2646/CI
J:VVPA	2524/REF	2529/AI				
JTSTACKSZ	2085/REF	2086/CI				
K	108/REF	381/GEN	2105/LI			
K:PRL	497-SET	500-SET	500/SET	505/DB	505/DB	
K:PRC	2377-LI	2391/BGZ				
	2361/BLE	2373-RES				

L	504=D8	505/D8	505/D8	507/SET	2046/LW	2048/8R	2094/CB
LBIUN	123/SREF	1656/CB	1659/CB	1894/LB	1927/STB		
LF	269-EQU 496-DATA	271/DEF	344-DATA	417-EQU	418/DEF	472-ESTS	473-ESTS
LNGL	124/SREF	1655/LI					
LAGNB	1916/BEZ	1919/BGE	1925/B	2005-EQU			
LOGON	1895/BEZ	1904-EQU					
LSWAP	196/REF	1920/LI					
M:FPFC	115/REF	2404/AWM	2624/AWM				
M:FPFH	115/REF	2298/LM	2299/STM	2407/STW	2424/LI	2628/STM	
M:FPPT	115/REF	2405/LW	2413/STW	2620/LW	2623/STW		
M:FREE#GRAN	191/REF	1922/CW	1965/LW	1967/CW	1969/LW		
M:JITPAGE	193/REF	1976/LW	1980/AWM				
MAP	847/B						
MASK	338-CNAME						
MAXG	238/REF	1650/LI					
MAXOVLY	181/REF						
MB:SPACEJIT	192/REF	1979/LB					
MX:IPRUT	116/REF	2385/STORE	2409/STORE	2411/LOAD	2414/LOAD	2415/STORE	2434/LOAD

	2436/LOAD	2622/STORE			
M12					
	248-EQU	919/AND	949/AND		
M17					
	47/REF				
M21					
	50/REF	1617/AND			
M24					
	49/REF	838/LM*	839/STM*	1623/AND	
M6					
	1063/REF	1069/AND	1070/EOR	2161/AND	2162/EOR
M7					
	47/REF	949/AND			
M8					
	47/REF	1009/AND	1812/AND	2826/AND	
NAME					
	412/DB				
NB31T60					
	58/REF	249/EQU	1213/EQU	1214/EQU	
N6LCT					
	1292/BAZ	1294/BG	1298-BAL		
N6TLNF					
	1245/BAZ	1247-RES			
N6T6FF					
	1897/BNE	1901-RES			
N61IN					
	2176-LI	2206/B			
NPMC					
	117/REF	2437/AI			
NREADY					
	262-EQU	1032/AND			
NSWAP					
	215/REF	1963/LW	1964/LW		
NULL					
	491-EQU	684/RESOURCE	1809/CI		
NUM					
	341/DB	422/DB	424/DB	498/DB	

OFF10							
OPNB00ST	1237/BNEZ	1240=RES					
OPNCLSUS	253=EGU	1493/AI					
OPNCLSUSR	232/REF	1873/LW	1878/STW				
OPNUNBLOCK	251=EGU	1491/CI					
P	681/RESOURCE	1872=RES					
P*	413=SET	415=SET	420=SET	420/SET	425=SET	425/SET	429/DATA
P*	432=SET	433/ERROR	435/DATA				
P*	423=SET	424/D0	425/SET				
PB:ILCT							
PB:PSZ	151/REF	1293/MTB	1303/MTB	1307/MTB	2745/MTB		
PB:UC	146/REF	1295/LB	1305/LB	2279/LB	2386/LB	2575/LB	2743/LB
PB:UC	2830/LB						
PB:UC	147/REF	1289/MTB	2336/LB	2569/MTB	2766/MTB	2772/MTB	2777/MTB
PBT:LOCK	2779/MTB	2793/MTB	2795/MTB				
PERFORM	148/REF	2340/LW					
PFA	129=EGU	131/D0	1207/D0	2267/D01	2275/D01		
PFRQ	2323=RES	2335/BEZ	2337/BNEZ	2344/BL			
PF1	7=SET	149/D01	2268/D0	2270/FIN	2822/D0	2829/FIN	
PF2A	2328/BGEZ	2330=LD					
PF3	2327=AI	2331/BEZ					
	2334=LOAD	2347/BDR					

PF3A		2347-BDR		
PF3B	2325/BANZ			
PGCHKM	2329/B	2348-SW		
PGSCR	35/DEF	2423-RES		
PH:FRQ	2433/B	2439-SCREECH	2465/BNE	2468/BNE
PIKF1	150/REF	2269/MTH	2823/LH	
PIKUS1	2157/BEZ	2164-LI		
PIKUS2	2165-LB	2175/BLE		
PIKUS25	2167-CH	2171/BNEZ		
PIKUS3	2169-RES	2184/B		
PIKUS5	2166/BEZ	2172-EQU		
PLH:FLG	2180-LI	2211/B		
PMONOFF	2531/LH	2533/REF		
PPR0CS	6-EQU	129/EQU		
PPR2	143/REF	2302/LI		
PPR3	2431/BEZ	2435/BEZ	2464-CW	
PPSWP	2432-BIR	2438/BNE		
PRCAV	1986/OR			
PRCAVM1	2221/BAL	2258/BAL	2260/BAL	2263-EQU

PRCAV1	2245/B	2262=LI					
PRCAVL	2265/BEZ	2273/BNEZ	2283=RES				
PROUT2	2232/B	2252=EGU					
PROUT3	2567/B	2590=EGU					
PROUT4	2205/BEZ	2492/BEZ	2594/BEZ	2598=EGU			
PROUT5	2602=RES	2607/BDR					
PULLEU	2601/LI	2607=8DR					
PULLE1	801=8DR	809/BL	813/BLEZ				
PXIHP	179/REF	2111/STW	2114/LPSD*				
PXIHP	144/REF	2272/LOAD	2330/LD	2334/LOAD	2379/LOAD	2387/STORE	2573/LOAD
PXIHP	145/REF	2380/LOAD					
QFORA1	1711/BAZ	1715=LI					
QFORA2	1704/BANZ	1712=AI					
RICBA	682/RESOURCE						
RINQW	685/RESOURCE						
RIBCR	681/RESOURCE						
RISYMD	680/RESOURCE						
RISYMF	679/RESOURCE						
RAPURGE	1085/SREF	1087/LI					

RCE0							
	1408-DISABLE	1903/BNE	2606/B				
RCE1	1413-CW	1437/B					
RCE2	1416/BLZ	1436-AI					
RCE3	1414/BANZ	143A-LB					
RCE4	1187/BAL	1445-LB	1570/B	1572/B	1598/BEZ	1605/B	1707/B
	1716/B	1730/B	1803/B				
RCVPSD	233/REF						
REGIPSD	781/REF	793/LD					
REG1	779/DEF	1381-PUSH					
REG1PSD	780/REF	1380/XPSD	1384/LS	1385/LW			
REG2	798/B	1387-BAL					
RELA	1812-AND	1828/BANZ	1830/B				
RFLB	1808/BANZ	1827-CW					
RESCNCT	1997/LI	2008/SREF					
RESOURCE	463-CNAME						
RETOK	2397/BLE	2401-AWM					
RETXCS	2357/BLZ	2393-LW					
RETXCS1	2399/BEZ	2417-RES					
RMAHOLD	258-EQU	2522/CI					

RT:INTENTRY							
	955/SREF	956/B					
RTHOLD							
	256-EQU	1346/CI	2513/CI	2682/CI			
RTR							
	1172/CI	1288/RSETST	1728/AND	1731/AND	2155/LI	2181/LI	2492/LI
	2520/CI	2562/LI					
S:ACCW							
	211/REF	1164/LD					
S:ACORE							
	160/REF	2675/LW					
S:CLOCK4							
	240/REF	1117/STW	1219/STW				
S:CUIS							
	174/REF	1089/LW	1958/MTW				
S:CUN							
	175/REF	905/LW	1016/LW	1161/STW	1199/LW	1216/LW	1241/LW
	1397/LW						
S:CUP							
	182/REF	1023/LW	1084/STW	1185/STW	1497/CW		
S:EVF							
	169/REF	1062/LW	1409/MTW	1640/MTW	2485/LW	2591/CW	
S:EXT							
	431/D8						
S:FPL							
	213/REF	2359/LW	2363/LW	2365/LW	2366/CW	2368/XW	2369/STW
	2376/LW	2378/AND	2820/MTW	2821/LW	2825/STW	2828/STW	
S:FPPC							
	205/REF	2150/STM	2303/SW	2356/SW	2388/AWM	2396/CW	2398/LCW
	2400/LW	2401/AWM					
S:FPPH							
	205/REF	2300/STM	2383/STW	2393/LW	2416/STW	2616/LM	
S:FPPPT							
	205/REF	2381/XW	2403/STW				
S:FR							
	431/D8						
S:FSEVF							

	171/REF	2202/CW	2644/STW				
S:HIR	168/REF	812/LW	1186/MTW	1501/MTW	1504/STW		
S:ISUN	201/REF	2177/STW	2217/STW	2352/LW	2497/LW	2504/CW	2563/LW
	2641/LW						
S:ISUNF	172/REF	1022/LW	2199/CW	2484/STS	2608/STB	2642/STW	2703/STB
S:IFR	431/D0						
S:MAPCW	211/REF	1167/LD					
S:OPC	180/REF	1020/LW	2612/MTW				
S:OSS	210/REF	2151/STM	2355/SW	2490/STW	2543/AWM		
S:OUAIS	166/REF	1918/CW	1921/LW				
S:OUIS	167/REF	1917/LW	1926/MTW				
S:PCORE	235/REF	2654/CW					
S:PCT	204/REF	2149/STM	2292/STW	2354/LW	2684/LW		
S:PRIDEC	185/REF	1183/AW					
S:PRPC	214/REF	2348/SW	2831/AWM				
S:RAD	431/D0						
S:RTCORE	120/REF	1297/AWM	1306/AWM	2676/SW			
S:RTIR	184/REF	806/CW	811/STW				
S:SET	393/EQU	396=CSECT	411/USECT	417/EQU	1413/CW	1415/LW	
S:SETI							

SISEVF	391/DEF	393-EQU					
SISIP	170/REF	1006/MTW	1035/MTW	1632/MTW	2201/LW	2351/MTW	2643/LW
SISJACCW	176/REF	1111/LW	2141/XW	2704/STW			
SISTL#	211/REF	1176/LD					
SISTLC	119/REF	2677/LW					
SISUM	161/REF	2690/CW	2692/STW				
S:TRNSVEC	431/DB						
SACT	432/SET	1441/BG	1577-EQU				
SBIFPL	234/REF	1059/BAL					
SB:FPN	209/REF	2595/LB					
SB:GJOBUN	208/REF	2488/STB	2578/MTB	2579/LB	2580/STB	2593/LB	
SB:HQ	239/REF	1652/CB					
SB:INP	219/REF	1064/LD	1074/LB	1112/LH	1451/STB	1465/LB	1467/STB
SB:OSN	1516/STB	1527/STB	1550/LB	1560/STB	1915/LB	2156/LD	2165/LB
SB:OSUL	202/REF	2219/STB	2278/MTB	2281/LB			
SB:RBLK	206/REF	2420/LB	2489/STB	2544/MTB	2545/LB	2599/LB	2633/LB
SB:IRG	207/REF	2535/LB	2546/STB	2604/LB	2635/LB		
SB:RBLK	203/REF	2282/STB					
SB:IRG	466/USECT	467/EQU	480-CSECT	1793/LB			

SB:RTUS	186/REF	1795/LB	1801/STB	1810/LB	1853/STB		
SB:SET	187/REF						
SB:SET:	390-CSECT	392/EQU	430/USECT	1438/LB			
SB:SWP	391/DEF	392-EQU					
SB:SWP:	394/EQU	774-ESTS2	2494/LB				
SB:TQ	391/DEF	394-EQU					
SCHED	220/REF 1537/STB	1448/STB 2502/LB	1458/LB	1460/STB	1513/STB	1522/LB	1526/STB
SCBR	5/DEF	12-EQU					
SCU	419/D0						
SC0	299-STATE 547/ESTS 631/ESTS	350/MASK 555/ESTS 638/ESTS1	472/ESTS 575/ESTS1 647/ESTS1	522/ESTS 586/ESTS1 663/ESTS	523/ESTS 595/ESTS 671/ESTS	529/ESTS 604/ESTS 677/ESTS	537/ESTS 624/ESTS 1179/LI
SC1	287-STATE	335/EQU	350/MASK	775/ESTS2	1509/LI	1571/AI	
SC10	288-STATE	335/EQU	350/MASK	775/ESTS2			
SC2	297-STATE	335/EQU	350/MASK	774/ESTS2			
SC3	289-STATE	335/EQU	350/MASK	775/ESTS2			
SC4	290-STATE	335/EQU	350/MASK	775/ESTS2			
SC5	291-STATE	335/EQU	350/MASK	775/ESTS2			
SC6	292-STATE	335/EQU	350/MASK	775/ESTS2			

SC7	293-STATE	335/EQU	350/MASK	775/ESTS2				
SC8	294-STATE	335/EQU	350/MASK	774/ESTS2				
SC9	295-STATE	335/EQU	350/MASK	774/ESTS2				
SEABRT	296-STATE	335/EQU	350/MASK	774/ESTS2				
SEERR	922/BCS	1235-RES						
SEF1	1253-RES	1261/BCR	1262/BCR					
SE0	1065/BEZ	1072-LI						
SE0VRUN	857/B	1060-BAL						
SETDL	923/BCS	1261-BCR						
SETDL1	1649/BANZ	1663-CW	1691/B					
SETRNST	1664/BAZ	1668/BAZ	1671-RES					
SEXU	1259/B	1260/REF						
SE1	42/DEF	298-EQU	1081/CI	1733/CI	2174/CI	2495/CI	2517/CI	
SE4D	1077/BANZ	1153-EQU						
SE4D1	1192/BAZ	1206-EQU						
SE4F	1198/BCR	1201-DISABLE						
SE6	1211/BAZ	1218-LI						
SE6A	1329/BANZ	1337-LH						
	1331/BAZ	1336/BAZ	1340-LW					

SE7	934/BCS	1327-LI					
SF7A	1334/DEF	1335-CI					
SE9	933/BCS	1343-CI					
SHIPINC	183/REF	1495/SH					
SHIRFLG	470/USECT	481-CSECT	1667/CH	1806/LH	1822/LH		
SIC1	1073-REF	1082/BLE					
SIC2	1076-CH	1079/BNEZ					
SIC3	1075/BEZ	1080-AI					
SI0MF	310-STATE 638/ESTS1	353/MASK 655/ESTS1	555/ESTS 1611/CW	575/ESTS1 1615/CI	586/ESTS1 1633/CI	595/ESTS	604/ESTS
SI0W	309-STATE 638/ESTS1	352/MASK 647/ESTS1	555/ESTS 655/ESTS1	575/ESTS1 1112/LH	586/ESTS1 1595/AI	595/ESTS 1611/CW	604/ESTS
SJAC	1174/CI						
SLIBIMF	228/REF	1629/LW					
SLI0IMF	228/REF	1626/LW					
SLI0PRI0	188/REF	1928/LW					
SLIQMIN	65/REF	810/LW					
SLIRSVP	118/REF	2678/SW					
SLISQNT	67/REF	1001/CW					
SLISQPB							

SLISQUAN	66/REF	854/SW					
SL1	231/REF	1004/CW					
SL2	2365-LW	2371/BDR					
SMAVBUT	2367/BGE	2371-BDR					
SMPSD	200/REF	2536/CI					
SNDDX	382-DATA	1315/BR	1316/LW				
SNSTS	236/REF	1093/LB					
SNULL	327-EQU	328/DEF	1440/CI				
	326-EQU	329/DEF	575/ESTS1	586/ESTS1	596/ESTS	605/ESTS	
	639/ESTS1	1914/LI					
SORTL	2362-LI	2372/BDR					
SPDBASE	178/REF	1311/LI					
SPECFILE	252-EQU	1491/CI					
SPECIFIC	489-EQU	685/RESOURCE	1807/CI				
SPPBASE	177/REF	1332/LI					
SQA	313-STATE	353/MASK	555/ESTS	575/ESTS1	586/ESTS1	596/ESTS	
	603/ESTS1	638/ESTS1	647/ESTS1	655/ESTS1	774/ESTS2	1715/LI	1717/CI
SGFI	325-STATE	351/MASK	556/ESTS	576/ESTS	587/ESTS	594/ESTS1	
	603/ESTS1	616/ESTS1	640/ESTS	655/ESTS1	677/ESTS	774/ESTS2	
SQR	317-STATE	353/MASK	555/ESTS	575/ESTS1	586/ESTS1	596/ESTS	604/ESTS
	638/ESTS1	656/ESTS	774/ESTS2	1663/CW	1802/LI	1827/CW	

SQR8	312-STATE 632/ESTS1	353/MASK 1663/CW	575/ESTS1 1827/CW	586/ESTS1	596/ESTS	604/ESTS
SQUAN	254-EQU	999/CI	1988/LI	2522/CI		
SRT	286-STATE	335/EQU	350/MASK	775/ESTS2	1546/LI	
SSEXIT	2600/BEZ	2700/B	2702-LI			
SSEO	870/DEF	874/LI	900-BAL	1267/B		
SSE1	901-LAW	1226/BNE	2129/B			
SSE11	902/BNE	904-RES				
SSE12	826-UNMAP	913/BAL	1014/BAL			
SSE41	805-SW	1012/BLZ				
SSE42	812-LW					
SSE43	814/BDR	815/LI	848-RES			
SSE5	936/BEZ	940/BG	947/BANZ	991-LI	1252/B	
SSE5A	902/BCR	992-ENABLE				
SSE6	1000/BAZ	1002/BL	1005/BL	1010-ENABLE		
SSF7	1021/BGEZ	1025/BLE	1034-RES			
SSE8	925/BEZ	932-LC				
SSIG	237/REF	1101/LB				
SSIN	2168/BAZ	2199-CW				

SSIN1	2209/BGE	2216-RES				
SSIN12	2200/BNE	2203/BNE	2207-RES			
SSTAT	1095/REF	1097/LB				
ST*	268-SET	268/SET	269/EQU	270/DISP	284-SET	298/EQU
STABRT	1648-CI	1690/BLZ				
STABRT1	1653/BE	1661-DISABLE	1693/BAL			
STASP	663/ESTS	1701-OR				
STATE	266-CNAME					
STBEEA	575/ESTS1	586/ESTS1	595/ESTS	604/ESTS	1683-OR	
STBEEAC	576/ESTS	587/ESTS	594/ESTS1	603/ESTS1	1682-OR	
STCRD	529/ESTS	1703-CI				
STI	322-STATE 603/ESTS1	352/MASK 638/ESTS1	536/ESTS1 656/ESTS	555/ESTS 774/ESTS2	576/ESTS 1705/LI	587/ESTS 596/ESTS
STIIP	522/ESTS	1591-EQU				
STI0	323-STATE 603/ESTS1	352/MASK 638/ESTS1	536/ESTS1	556/ESTS	576/ESTS	587/ESTS 596/ESTS
STI0C	676/ESTS	1609-EQU				
STI0CC	41/DEF	1580-BAL	1582/EQU	1618/BEZ	1625/B	1635/B
STI0MF	523/ESTS	1590-LI				
STIRC						

STIRCU	536/ESTS1	1581-BAL	1676/BIR	1981/LI			
STK0	537/ESTS	1719-RES					
STK0T	655/ESTS1	1731-AND					
STN0P	656/ESTS	1726-LB					
ST0B	555/ESTS	620/ESTS	638/ESTS1	648/ESTS	1641-RES		
ST0B0	303-STATE 604/ESTS	352/MASK 638/ESTS1	547/ESTS 656/ESTS	554/ESTS1 774/ESTS2	576/ESTS 1727/AI	587/ESTS	595/ESTS
ST0C	304-STATE 639/ESTS1	352/MASK 1727/AI	554/ESTS1	576/ESTS	587/ESTS	595/ESTS	604/ESTS
ST0A	554/ESTS1	1582-EQU					
ST0A	631/ESTS	1708-EQU					
ST0C	616/ESTS1	1489/LI	1494/AI	1579-BAL	1702/B	1718/BE	1820/BAL
ST0COM	640/ESTS	671/ESTS	1578-BAL				
STUQA	647/ESTS1	1717-CI					
STUQFAC	1741-EQU	1871/B					
SW	312-STATE 603/ESTS1	351/MASK 616/ESTS1	555/ESTS 624/ESTS	576/ESTS 640/ESTS	587/ESTS 655/ESTS1	594/ESTS1 774/ESTS2	1265/LI
SWAPD	255-EQU	1210/CI	1988/LI				
SWAPIN	212/REF	2305/BEZ	2419/LI	2473/EQU			
SWAP0UT	212/REF	2353/BEZ	2422/LI				
SWIPEPGS							

SWP	2262/LI	2286-EQU				
	774/ESTS2					
SYSACT						
T:ABORTM	152/REF	1232/LW				
	162/REF	1361/B				
T:ACCTEX						
	224/REF	1015/BAL	1215/BAL			
T:ACCTOV						
	876/DEF	898-EQU				
T:BLKV						
	469/DATA	679/RESOURCE	680/RESOURCE	681/RESOURCE	682/RESOURCE	683/RESOURCE
	684/RESOURCE	685/RESOURCE	1794/BNEZ	1861-EQU		
T:CHS						
	34/DEF	1569-DISABLE				
T:CHSE						
	1490-LB	1572/BAL	1579/BAL	1580/BAL	1586/B	
T:CHSEO						
	1036/BAL	1489-LI				
T:DELUSZAP						
	198/REF	1197/BCS				
T:DLR1						
	979/DEF	982/BANZ	987-RFS			
T:DOLIST						
	916-EQU	990/BNE				
T:DOLISTR						
	972/DEF	980-EQU				
T:ECBSTORE						
	953/SREF	954/B				
T:ECCP						
	1350/B	1351/REF				
T:IOREG						
	782/DEF	792-PUSH				
T:MASTER						
	245/REF	900/BAL	1224/BAL			
T:OFF						

TIPAC	1236-LW						
TIPGCHK	114/REF	1309/BAL					
TIPULLE	35/DEF	2425-RD					
TIPULLE1	801/BDR 2099-EQU	802/LI 2108/EQU	1228/BEZ	1230/BGZ	1358/B	1714/B	2098/DEF
TIGH	2102/BCR	2104/BEZ	2107-EQU				
TIGT	1456/BLZ	1464-STB	1533/B				
TIRCE	1457-STB	1556/B					
TIRE	45/DEF	1894-LB					
TIREG	43/DEF	1397-LW					
TIREL	1266/BAL	1300/BAL	1379/DEF	1380-XPSD			
TIRELV	1792/BLZ	1806-LH	1826/B				
TIREL1	471/DATA 1870-EQU	679/RESOURCE	680/RESOURCE	682/RESOURCE	683/RESOURCE	685/RESOURCE	1813/BNE
TIRES	1779/EQU	1814-DISABLE	1879/B				
TIRUE	472/ESTS	473/ESTS	1789-AI	2002/LI			
TISAVE	44/DEF	2605-LW					
TISCRATCH\$USER	794/BAL	1386/BAL					
TISE	199/REF	1200/B					
	1044/DEF	1045-EQU	1148/B	1173/BAZ	1388/LI		

T:SEB						
T:SES	856-UNMAP	1594/LI				
T:SEXIT	244/REF	1060/BAL				
T:SGAJIT	154/REF	2706/B				
T:SMPFLG	195/REF	1977/BAL				
T:SS	246/REF	1387/BAL				
T:SSE	875/B	1058/BAL	2139-EQU			
T:SSEC	871/DEF	873-EQU				
T:SSEM	869/DEF	872-EQU				
T:TELDELCCI	876/DEF	899-EQU	1322/B	1339/BAZ	1344/BANZ	1347/BANZ
T:TOTESZ	159/REF	931/BAZ	1251/BNE			
T:TOTSZ	37/EQU	2652/BAL	2720-EQU			
T:UQR	36/DEF	37-EQU				
T:UTSXTS	1669/BAL	1817/BAL	1849-LW			
TCOR	1313/BAL	1356/BAL	2013/DEF	2014-EQU		
TEL	431/DB					
TEMP	384-RES	777/USECT				
TEMPBOT	340-SET	342-SET	342/SET	344/DATA		
TIC	1753/STH	1756/LH	1776/REF			

	930/CI 2230/CI 2790/CI	946/CI 2239/CI	1249/LI 2551/CI	1328/CI 2724/CI	1335/CI 2763/RSETST	1343/CI 2768/LSETRST	1986/UR 2774/CI
TOTE	2729/BAL	2731/BAL	2734/BAL	2736/BAL	2742=BEZ		
TOTE1	2725/BANZ	2738=LB					
TOTE2	2727/BANZ	2733/BEZ	2740=LB				
TOTE3	2734=BAL	2739/B	2741/B				
TRAPEXIT	876/DEF	894=LW					
TSS1	2138/DEF	2144=EGU					
TSS2	35/DEF	2146=EGU					
TSTACK	380/DATA 2106/STH	830/AI 2110/AW	836/AW	894/LW	1280/STD	1323/LW	2057/LW
U	410=SET	439/USECT					
U*	465=SET	474/USECT	609=SET	610/ERROR			
U:MISC	82/REF 1855/STW	805/SW	1223/STW	1264/STW	1665/LW	1797/STW	1849/LW
UB:ACP	75/REF	2244/LB	2738/LB	2765/LB	2771/LB		
UB:APB	77/REF	2261/LB	2559/LB	2730/LB	2778/LB	2794/LB	
UB:APR	76/REF	2259/LB	2557/LB	2728/LB	2776/LB	2792/LB	
UB:ASP	78/REF	1286/LB	2255/LB	2732/LB	2783/LB	2799/LB	
UB:BL	83/REF	1445/LB	1452/STB	1461/STB	1464/STB	1468/STB	1510/LB

	1518/STB 1562/STB	1524/STB 1565/STB	1531/LB 1566/STB	1534/STB 2508/LB	1541/STB	1558/LB	1561/ ³² STB
UB:DB	79/REF	2257/LB	2740/LB	2785/LB	2801/LB		
UB:FL	82/REF 1511/LB 1543/STB	1078/LB 1517/STB 1554/LB	1446/LB 1525/STB 1557/STB	1453/STB 1535/LB 1564/STB	1457/STB 1538/STB 2170/LB	1462/STB 1539/STB	1469/STB 1542/STB
UB:MF	229/REF	1592/LB	1610/MTB	1613/LB	1630/CB	1636/LB	2514/LB
UB:NECB	84/REF						
UB:OV	80/REF	2220/LB	2735/LB	2787/LB	2803/LB		
UB:PCT	74/REF	1991/STB	2218/LB	2722/LB	2723/LB		
UB:PRIO	86/REF 1529/CB 1854/STB	851/LB 1548/STB	1024/CB 1552/CB	1180/LB 1735/LB	1184/STB 1798/STB	1496/STB 1800/STB	1519/LB 1851/LB
UB:PRIOB	87/REF	939/CB	1181/CB	1490/LB	1547/LB	1959/STB	
UB:SWAPI	194/REF	1975/STB					
UB:US	81/REF 1726/LB	850/LB 1819/LB	1018/LB 1992/LB	1178/LB 2182/LB	1411/LB 2516/LB	1639/STB	1662/LB
UFLAGS	3=SET						
UH:AJIT	73/REF	1984/STH					
UH:DL	85/REF 1204/STH	907/CH 1225/LH	915/LH 1672/CH	920/STH 1674/AH	950/STH 1675/STH	989/LH 1994/STH	1202/LH
UH:FLG	72/REF 1585/STH	917/LH 1709/LH	1019/LH 1713/STH	1033/STH 1721/STH	1076/CH 1729/STH	1171/LH 1732/STH	1439/LH 1875/LH

	1877/STH 2222/LH 2721/LH	1985/LH 2506/CH 2780/LH	1987/STH 2519/LH 2789/LH	2167/CH 2550/LH 2796/LH	2208/MTH 2645/LH	2212/LH 2697/LH	33 2214/STH 2699/STH
UH:FLG2	197/REF 1290/LH 2681/LH	998/LH 1337/LH	1008/STH 1345/LH	1189/LH 1898/LH	1195/STH 1900/STH	1217/STH 1989/STH	1242/LH 2512/LH
UNMAP	803/B						
UNQEMPTY	1749/BCS	1752-LH					
UNQFILL	1750/BCS	1756-LH					
UNQNEXT	1743-AI	1773/B					
UNQNEXT1	1767/BLE	1769-LI					
UNQSETFL	1751/B	1754/B	1758-LH				
UNQXIT	1744/BLZ	1779-EQU					
UQFAC	684/RESOURCE	1871-B					
USER0R	2475-BAL	2592/BNE					
USERS0UT	2178/B	2349/BGZ	2476-EQU				
US0UT10	2549/LI	2561-EQU					
US0UT2	2496/BG	2502-LB	2509/B				
US0UT4	2493-AI	2503/BEZ					
US0UT5	2507/BANZ	2510-EQU					
US0UT7	2508-LB	2515/BCS	2523/BANZ	2532/BLZ	2537/BGE	2564/BEZ	2566/BL

USOUT9	2512/BG	2521/BAZ	2526/BAZ	2534-EQU		
UXIJIT	71/REF	827/LOAD	1162/LOAD	2225/LOAD	2527/LOAD	2538/LOAD
WAITIMASK	349/DEF	351-MASK				
WORDCNT	1762/LH	1764/STH	1777/REF			
XFDFE	249-EQU	1190/AND				
XFFEF	1212/AND	1213-EQU				
XFFF	247/REF	248/EQU				
XFFF7	1007/AND	1214-EQU				
XN2	250/REF	262/EQU	896/AND			
X1	54/REF	1412/LW	1683/0R	1684/LH		
X1FE00	2081/REF	2082/AND				
X20	56/REF	1584/0R	1899/0R			
X4000	57/REF	1203/0R	1720/0R			
X8	55/REF	1876/0R				
X8000	51/REF	2698/0R				
X9FFF	1759/AND	1775-DATA				
YFF	48/REF	1601/CW				
Y004	48/REF	1105/LW				
Y008						

Y4	48/REF	982/CW	2124/CW				
Y7D	48/REF	852/CW	1003/BR				
Y7F	53/REF	1066/BR	2158/BR				
Y8	52/REF	1621/CW					
19SPD	47/REF	1609/BR	1670/BR	1682/BR	1701/BR	1706/BR	2483/LW
IBIG	380-DATA	1279/LD					
	1990/LI	2324/CI	2324/CI	2324/CI	2324/CI	2326/SLS	2332/SLS
	2333/AI	2333/AI	2333/AI	2333/AI			

W01 13:35 SEP 08, '75
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PCC

SCHEDULER REFS AND DEFS
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W01 13:35 SEP 08, 1975
3 00000001
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6 00000001
7 00000001
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SCHEDULER REFS AND DEFS

UFLAGS SET 1
SYSTEM UTS
DEF SCHED
PMONBFF EQU 1
PFRQ SET 1
*P*****
M SCHED = EXECUTION AND SWAP SCHEDULER *
*P*****

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SCHED EQU S

*
* CP = V SCHEDULER *

*
* SCHEDULES USERS FOR SWAPPING AND FOR *
* EXECUTION, ALSO HANDLES TRAP AND INTER- *
* RUPT EXITS. *
*

24 * ORIGINAL IMPLEMENTATION FOR UTS BY:
25 * G. A. PERRY
26 * H. L. SCANTLIN
27 *
28 * SPEED-UP ENHANCEMENTS BY: T. W. MARTIN
29 *
30 * MULTI-PRIORITY SCHEDULING FOR REAL TIME BY:
31 * R. I. MUSTVEDT
32 *

MO1 13135 SEP 08, 1975

SCHEDULER REFS AND DEFS

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 37 FR T:TOTSZ
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DEF T:CHS
 DEF T:PGCHK,TSS2,PGCHKM
 DEF T:TOTSZ
 EQU T:TOTSZ
 DEF GIVEUP
 DEF GETJIT
 DEF CHSEO CHANGE STATE EXECUTABLE SUB-ENTRY FOR
 DEF STIBCC IS COMPLETE TRANSITION
 DEF SEXU EXECUTABLE STATE NUMBER
 DEF T:RE REPORT EVENT FOR CURRENT USER
 DEF T:RUE REPORT EVENT FOR SPECIFIED USER
 DEF T:RCE REPORT EVENT FOR CQC LINE
 DEF ALTERR STACK PROBLEM FOR ALTERNATE ENTRY
 REF M7,M8,M17,Y8
 REF YFF,Y4,Y008,Y004,DBUBLEZERO
 REF M24
 REF M21
 REF X8000
 REF Y7F
 REF Y7D EXPONENT FOR FLOATING SHIFT
 REF X1
 REF X8
 REF X20
 REF X4000
 REF NB31T00

SCHEDULER REFS AND DEFS

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*****
* ALL REFS *
*****
* SYSTEM LIMITS FOR SCHEDULER
  REF SL:QMIN          MIN. QUANTUM SIZE
  REF SL:SQPB         PRI0 BOOST IF INTERRUPT AFTER SQNT
  REF SL:SQNT         THRESHOLD AT WHICH TO EXPEDITE USER
*
* USER TABEL REFS
*
  REF UX:JIT
  REF UH:FLG
  REF UH:AJIT
  REF UB:PCT
  REF UB:ACP
  REF UB:APR
  REF UB:AP0
  REF UB:ASP
  REF UB:DB
  REF UB:0V
  REF UB:US
  REF UB:FL
  REF UB:BL
  REF UB:NECB
  REF UH:DL          DO LIST HEAD
  REF UB:PRI0       USER EXECUTION PRIORITY
  REF UB:PRI0B     BASE EXECUTION PRIORITY
  REF U:MISC        MISC CELL FOR RESOURCE SUB.QUEUES
  SREF ECB:BLK     ENTRY POINT TO FREE DO LIST BLOCKS
*
* JIT REFERENCES FOR SCHEDULER
*
  REF J:RNST
  REF J:ABC
  REF ER0
  REF J:INTENT

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SCHEDULER REFS AND DEFS

97	REF	J:OVHTIM	
98	REF	J:UTIMER	
99	REF	J:IMENT	
100	REF	J:ITCB	
101	REF	J:JIT	
102	REF	J:IDELTAT	
103	REF	J:IIDELTAT	
104	REF	J:ICTIME	
105	REF	JBPPC PHY PG HEAD, TAIL & COUNT	
106	REF	J:ITELFLGS	
107	REF,1	JBIPNR	
108	REF	JTSTACKSZ	
109	REF	BUFMASK	
110	REF,1	JBIFRS	
111	*		
112	* MEM MGMT REFS		
113	*		
114	REF	TIPAC	
115	REF	M:FPFH, M:FPPT, M:FPFC	
116	REF	MXIPPUT	MONITOR PHYSICAL PAGE TABLES
117	REF	NPMC	
118	REF	SLIRSVF	COUNT OF PAGES RESERVED FOR STEALER
119	REF	S:STL#	NUMBER OF CUR STOLEN PAGES
120	REF	S:RTCORE	TOTAL OF REAL TIME HOLD PAGES
121	* LINE TABLE REFS		
122	*		
123	SREF	LBIUN	LINE TO USER NO TABLE
124	SREF	LNOL	NO OF LINES
125	REF	COCOFF	
126	*		
127	* PERFORMANCE MEASUREMENT REFS		
128	*		
129	PERFORM	EQU	PMONOFF
130	REF	DID*IO	
131	00000001	DO PERFORM	
132	REF	C:PROCREG	
133	REF	C:INOPRC	

134		REF	ACTIVATE	
135		FIN		
136		REF	C:IDLES	
137		REF	C:IDLE	
138		REF	C:NSP	
139		REF	C:INIC	CLOCK 3 COUNTER CELL
140		*		
141		* PRDC.	TABLE REFERENCES	
142		*		
143		REF	P:PROCS	NO OF PROCS
144		REF	PX:HP	HEAD OF PHYSICAL PAGES
145		REF	PX:TP	TAIL
146		REF	PB:PSZ	PROCEDURE SIZE
147		REF	PB:UC	USER COUNT
148		REF	PB:LOCK	PROC LOCK
149	01 00000	DB1	PFRQ	
150		REF	PH:FRQ	CALL FREQUENCY
151		REF	PB:LC	COUNT OF ASSOC LOCKED USERS
152		*		
153		*		
154		REF	T:SEXIT	
155		*		
156		* STEP REF		
157		*		
158		REF	SYSACT	
159		REF	T:DELCCI	
160		REF	S:ACORE	AVAIL CORE
161		REF	S:STLC	STEALABLE PAGES
162		REF	T:ABORTM	
163		*		
164		* SCH DATA REFS		
165		*		
166		REF	S:QUAIS	
167		REF	S:QUIS	
168		REF	S:HIR	
169		REF	S:EVF	
170		REF	S:SEVF	SWAP SET CHANGE COUNTER

SCHEDULER REFS AND DEFS

171	REF	S:IFSEVF	SEVF AT SWAP SCHED FAIL
172	REF	S:ISUNF	ISUN AT SWAP SCHED FAIL
173	REF	ALLOUT	ALLOCAT OUTSWAP REQ FLAG
174	REF	S:CUIS	
175	REF	S:ICUN	
176	REF	S:SIP	
177	REF	SPPBASE	
178	REF	SPDBASE	
179	REF	PULLE1	
180	REF	S:OPC	OVERLAY PROTECTION COUNTER
181	REF	MAXOVLY	HIGHEST OVERLAY NUMBER
182	REF	S:ICUP	CURRENT USER PRIORITY
183	REF	SHIPINC	PRIORITY INCREMENT TABLE
184	REF	S:RTIR	REAL TIME IN FLAG
185	REF	S:PRIDEC	PRIORITY DECREMENT
186	REF	SB:RQ	HEAD OF RESOURCE SUBQ
187	REF	SB:IRTUS	REAL TIME USER NUMBER
188	REF	SL:OPRIO	DEFAULT ONLINE PRIORITY
189	* SWAPPER REFS		
190	*		
191	REF	M:FREE#GRAN	
192	REF	MB:SPACEJIT	
193	REF	M:JITPAGE	
194	REF	UB:ISWAPI	
195	REF	T:ISGAJIT	
196	REF	LSWAP	
197	REF	UH:FLG2	
198	REF	T:DELUSZAP	
199	REF	T:SCRATCH#USER	
200	REF	S:MAXOUT	
201	REF	S:ISUN	
202	REF	SB:INP	
203	REF	SB:PNL	
204	REF	S:PCT	
205	REF	S:FPPH,S:FPPT,S:FPPC	
206	REF	SB:OSN	
207	REF	SB:OSUL	

SCHEDULER REFS AND DEFS

208	REF	SBIFPN	
209	REF	SBIFPL	
210	REF	S:OSS	
211	REF	S:ACCW,S:MAPCW,S:SJACCW	
212	REF	SWAPIN,SWAPOUT	
213	REF	SIFPL	
214	REF	S:PRPC	
215	REF	NSWAP	NO. OF SWAPPERS IN SYSTEM
216	*		
217	*	SCH Q REFS	
218	*		
219	REF	SB:HQ	
220	REF	SB:IQ	
221	*		
222	*	ACCOUNTING REFS	
223	*		
224	REF	T:ACCTEX	
225	*		
226	*	MISC REFS	
227	*		
228	REF	SL:OIMF,SL:BIMF	
229	REF	UB:MF	
230	REF	J:ACCN	
231	REF	SL:SQAN	
232	REF	OPNCLSUS	
233	REF	RCVPSD	
234	REF	SACT	
235	REF	S:PCORE	
236	REF	SNDDX	
237	REF	SSIG	
238	REF	MAXG	
239	REF	SB:GJOBUN	
240	REF	S:CLOCK4	CLOCK4 COUNTER DIRECTOR
241	*		
242	*	MP INTERFACE REFS	
243	*		
244	REF	T:SES	SCHEDULE EXECUTION FOR SLAVES

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SCHEDULER REFS AND DEFS

44

245			REF	T:MASTER	CHECK FOR MASTER AND CLR MASTER
246			REF	T:SMPFLG	SET MASTER ONLY FLAG
247			REF	XFFF	
248	EXT		EQU	XFFF	
249	0000000E	S	EQU	NB31T00+14	
250			REF	XN2	
251	00000008		EQU	8	USER IS 0PNCLS USER
252	00000004		EQU	4	
253	00000004		EQU	X'04'	PRIORITY BOOST FOR 0PNCLSUS
254	00000008		EQU	8	UH:FLG2 NOT HAD SWAP QUAN BIT
255	00000010		EQU	16	UH:FLG2 JUST SWAPPED IN
256	00000800		EQU	X'800'	UH:FLG2 REAL TIME OLD
257	00000200		EQU	X'200'	UH:FLG2 INTERRUPTED IN A CAL
258	00002000		EQU	X'2000'	UH:FLG2 RMA HOLD IN CORE
259	00000020		EQU	X'20'	UH:FLG2 C0C LINE HANG UP
260	00008000		EQU	X'8000'	UH:FLG SWAP BYPASS FOR PAGE STEALING
261	00000002		EQU	2	UH:FLG INTENTRY INHIBIT
262	EXT		EQU	XN2	UH:FLG MASK TO RESET RTR

STATE DEFINITIONS

264
 265
 266 00000000
 267
 268
 269
 270
 271
 272
 273
 274
 275
 276
 277
 278
 279
 280
 281
 282
 283
 284 00000000
 285
 286 00000001
 287 00000002
 288 00000003
 289 00000004
 290 00000005
 291 00000006
 292 00000007
 293 00000008
 294 00000009
 295 0000000A
 296 0000000B
 297 0000000C
 298 0000000D
 299 0000000E
 300

```

*
*STATE NOS
STATE CNAME
      PRBC
ST# SET ST#+1
LF EQU ST#
      DISP ST#
      DEF LF
      PEND
*****
*
* DEFINE STATE VALUES
*
* ORDERING OF EXECUTABLE STATES IS CRITICAL
*
* STATES ST1,ST10 ST0B,ST0B0 SQR,SQR0 MUST BE PAIRED
* THIS IS USED BY THE KICKOUT ROUTINE TO COMPUTE THE
* OUT OF CORE STATE.
*****
ST# SET 0
*
SRT STATE REAL TIME EXECUTE
SC0 STATE BGRD X1BF1< PRI0 < X1F61
SC1 STATE PRI0 = X1F61
SC2 STATE PRI0 = X1F71
SC3 STATE PRI0 = X1F81
SC4 STATE PRI0 = X1F91
SC5 STATE PRI0 = X1FA1
SC6 STATE PRI0 = X1FB1
SC7 STATE PRI0 = X1FC1
SC8 STATE PRI0 = X1FD1
SC9 STATE PRI0 = X1FE1
SC10 STATE PRI0 = X1FF1
SEXU EQU ST# LAST EXECUTABLE STATE
SCU STATE CURRENT USER
*****
    
```

S T A T E D E F I N I T I O N S

THESE STATES MUST BE PAIRED (ST0B,ST0B0)

```

301 *
302 *
303 0000000E ST0B STATE TERMINAL OUTPUT BLOCKED
304 0000000F ST0B0 STATE TERMINAL OUTPUT BLOCKED - OUT
305 *****
306 * SI0W AND SI0MF MUST BE ADJACENT STATES
307 * AND SI0W MUST BE EVENLY DIVISIBLE BY 4
308 *
309 00000010 SI0W STATE I/O WAIT
310 00000011 SI0MF STATE MASTER FUNCTION COUNT TOO HIGH
311 *****
312 00000012 SW STATE WAIT (ASLEEP)
313 00000013 SQA STATE QUEUED FOR ACCESS
314 *****
315 * THESE STATES MUST BE PAIRED (SQR,SQR0)
316 *
317 00000014 SQR STATE QUEUED FOR RESOURCE
318 00000015 SQR0 STATE QUEUED FOR RESOURCE OUT OF CORE
319 *****
320 * THESE STATES MUST BE PAIRED (STI,STI0)
321 *
322 00000016 STI STATE TERMINAL INPUTTING
323 00000017 STI0 STATE TERMINAL INPUTTING - OUT
324 *****
325 00000018 SQFI STATE QUEUED FOR INTERRUPT
326 0000001E SNULL EQU 30 NULL STATE FOR EMPTY USER SLOTS
327 0000001F SNSTS EQU 31 NUMBER OF STATES
328 DEF SNSTS
329 DEF SNULL
330 *****
331 *
332 * LIST OF EXECUTABLE STATES FOR STATE EVENT
333 * TRANSITION TABLE FORMATION.
334 *
335 LIST EXECUTE EQU SRT,SC0,SC1,SC2,SC3,SC4,SC5,SC6,SC7,SC8,SC9,SC10
336 *****
337 *
    
```

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00000000

S T A T E D E F I N I T I O N S

47

```
338 MASK CNAME
339 PROC
340 TEMP SET 0
341 I DO NUM(AF)
342 TEMP SET TEMP|1**AF(I)
343 FIN
344 LF DATA TEMP
345 PEND
346 *
347 *
348 *
349 DEF EXU;MASK, WAIT;MASK, IOWAIT;MASK, BLCKD;MASK
350 01 00000 00003FFE A EXU;MASK MASK SRT, SC0, SC1, SC2, SC3, SC4, SC5, SC6, SC7, SC8, SC9, SC10, SCU
351 01 00001 01040000 A WAIT;MASK MASK SW, SQFI
352 01 00002 00C1C000 A IOWAIT;MASK MASK ST0B, ST0B0, SI0W, ST1, ST10
353 01 00003 003A0000 A BLCKD;MASK MASK SI0MF, SQA, SQR, SQR0
354 *
```

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S T A T E D E F I N I T I O N S

356		*		
357	00000000	R0	EQU	0
358	00000001	R1	EQU	1
359	00000002	R2	EQU	2
360	00000003	R3	EQU	3
361	00000004	R4	EQU	4
362	00000005	R5	EQU	5
363	00000006	R6	EQU	6
364	00000007	R7	EQU	7
365	00000008	R8	EQU	8
366	00000009	R9	EQU	9
367	0000000A	R10	EQU	10
368	0000000B	R11	EQU	11
369	0000000C	R12	EQU	12
370	0000000D	R13	EQU	13
371	0000000E	R14	EQU	14
372	0000000F	R15	EQU	15

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STATE DEFINITIONS

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374			*			
375			* EVENT	NBS		
376			*			
377					B8UND	8
378	01	00004	0040037D	C3MP	GEN,10,22	1,CK3UM1
379	01	00005	17000000 A		DATA	X'17000000'
380	01	00006	00000014 N	19SPD	DATA	TSTACK+1+19
381	01	00007	F*ED0013 N		GEN,16,16	JTSTACKSZ=19,19
382	01	00008	00C00000 A	SMPSD	DATA	X'00C00000'
383	01	00009	00000000 A		DATA	0
384	01	0000A		TEL	RES	0

TSTACK SPD WITH 19 WORDS IN IT.
(MUST BE ON DW BOUNDARY).
PSD WHICH SAYS SLAVE, MAPPED,
WK=0.

```

387 *
388 * TRANSITION TABLES
389 *
390 02 00000 SB:SET CSECT 0 BYTE TABLE GIVING OPERATION TO BE
391 DEF SB:SET!,S:SET!,SB:SWP!
392 02 00000 SB:SET! EQU SB:SET
393 FR S:SET! EQU S:SET
394 FR SB:SWP! EQU SB:SWP
395 *
396 03 00000 S:SET CSECT 0 DONE GIVEN EVENT AND STATE
397 * WORD TABLE CORRESPONDING TO SB:SET
398 *
399 * THESE PROCS DEEFINE EVENT STATE RELATIONSHIPS
400 *
401 * THE EVENT NUMBER IS THE STARTING POSITION IN
402 * S:SET AT WHICH TO BEGIN THE SEARCH FOR A STATE MATCH
403 * THE RESULT OBTAINED FROM SB:SET WILL BE EITHER A STATE
404 * NUMBER IF LESS THAN X'20' OR A DISPLACEMENT FROM
405 * S:TRNSVEC. AN ERROR WILL BE FLAGGED IF THE OFFSET FROM
406 * S:TRNSVEC IS TOO LARGE(>X'EO').
407 0000000U ESTS CNAME 0 NO CONTINUATION
408 00000001 ESTS1 CNAME 1 CONTINUATION
409 PROC
410 U SET * REMEMBER CURRENT CS POSITION
411 USECT S:SET
412 DB NAME
413 P SET X'80000000' SET CONTINUATION BIT(BIT 0)
414 ELSE
415 P SET 0
416 FIN
417 LF EQU *-S:SET
418 DEF LF
419 DB SCOR(AF(2),ALL)
420 P SET PIX'7FFFFFFF'
421 ELSE
422 I DB NUM(AF)-1
423 P$ SET AF(I+1)

```

EVENT DEFINING PROCEDURES

424
425
426
427
428
429
430
431
432
433
434
435
436
437
438
439
440

```

I$      DO      NUM(P*)
P      SET      PI(1**P*(I$))
      FIN
      FIN
      FIN
      DATA     P      GENERATE S:SET WORD
      USECT     SB:SET
      DO      TCR(AF(1),S:RAD,S:SUM,S:EXT,S:FR,S:LFR)>0
P      SET      AF(1)-S:TRNSVEC+X'20'
      ERROR,7,P>X'FF' 'SPECIAL TRANSITION ROUTINE TOO FAR FROM',)
      ' S:TRNSVEC'
      DATA,1   P
      ELSE
      DATA,1   AF(1)
      FIN
      USECT     U
      PEND

```

```

442 *
443 * THIS PROC DEFINES THE EVENTS FOR BLOCKING ON
444 * UNAVAILABLE RESOURCES AND RESTARTING WHEN RELEASED
445 * EACH CALL DEFINES TWO EVENTS: THE BLOCK EVENT(LF(1))
446 * AND THE UNBLOCK EVENT(LF(2)).
447 * FLAGS MAY BE SPECIFIED FOR EACH RESOURCE DEFINING
448 * WHETHER OR NOT TO CHANGE STATE UPON THE RECEIPT OF
449 * AN ERR,ABRT,EC OR BRK. ANOTHER FLAG PERMITS THE ENTIRE
450 * SUB=QUEUE TO BE FLUSHED WHEN AN UNBLOCK EVENT IS REPORTED.
451 * A FLAG WILL ALTER THE MEANING OF THE UNBLOCK EVENT SUCH
452 * THAT THE USER TO BE UNBLOCKED IS THAT FOR WHOM THE
453 * EVENT IS REPORTED. NORMALLY THE USER NUMBER ASSOCIATED
454 * WITH THE UNBLOCK REPORT IS IGNORED AND THE CORRECT USER
455 * NUMBERS ARE OBTAINED FROM THE RESOURCE SUB=QUEUE.
456 *
457 *
458 * OPTIONAL EXITS ARE PROVIDED AT BOTH BLOCK AND UNBLOCK
459 * EVENTS TO PERFORM SPECIAL CHECKING ETC.
460 *
461 *E:BLK,E:REL RESOURCE RTBLK,RTREL,FLAGS
462 *
463 0000000U RESOURCE CNAME 0
464 PRBC
465 U$ SET $
466 USECT SB:RBLK
467 CF(2) EQU BA(*)=BA(SB:RBLK)
468 DEF CF(2)
469 DATA,1 AF(1)=T:BLKV
470 USECT SH:RFLG
471 DATA,2 (AF(2)=T:RELV)+AF(3)
472 LF(1) ESTS T:RES,SCU
473 LF(2) ESTS T:RES,ALL
474 USECT U$
475 PEND
476 *
477 * BLOCK CALLS SHOULD ONLY BE MADE VIA T:REG
478 * RELEASE EVENTS MAY BE REPORTED VIA T:RUE OR T:RE

```

```

479 *
480 04 00000 SB:RBLK CSECT 0
481 05 00000 SH:RFLG CSECT 0
482 *
483 *
484 *
485 00008000 ABRT EQU X'8000' ABORT FLAG
486 00004000 ERR EQU X'4000' ERR FLAG
487 00002000 EC EQU X'2000' CONTROL=Y FLAG
488 00001000 BRK EQU X'1000' BREAK FLAG
489 00000100 SPECIFIC EQU X'100' SPECIFIC USER ONLY
490 00000200 FLUSH EQU X'200' FLUSH ALL
491 00000400 NULL EQU X'400' DO RELEASE ACTION IF NULL QUEUE
492 *
493 00000000 ESTS2 CNAME
494 PR0C
495 B0UND 4
496 LF DATA,1 0
497 K SET 0
498 J DB NUM(AF)=1
499 DATA,1 AF(J+1)
500 K SET K+(1**(AF(J+1)))
501 FIN
502 DATA,1 0
503 AF(1) SET 0
504 L DB 31
505 DB (K&(1**L))=((K&(1**(L-1)))*1)
506 ELSE
507 AF(1) SET AF(1)+(1**(32-L))
508 FIN
509 FIN
510 B0UND 4
511 PEND

```

513
 514
 515
 516
 517
 518
 519
 520
 521
 522 03 00000 00002000 A
 02 00000 25 A
 523 03 00001 00002000 A
 02 00000 1 27 A
 524
 525
 526
 527
 528
 529 03 00002 00002000 A
 02 00000 2 75 A
 530
 531
 532
 533
 534
 535
 536 03 00003 80C00000 A
 02 00000 3 23 A
 537 03 00004 00002000 A
 02 00001 80 A
 538
 539
 540
 541
 542
 543
 544

```

*
* STATE EVENT TRANSITION TABLES. FIRST ARGUMENT OF PROC IS
* ACTION TO TAKE. OTHER ARGS ARE THE STATES,
* GIVEN THE EVENT, THAT SHOULD CAUSE THE ACTION
*****
*
* THESE EVENTS(E:IIP,E:QMF) MUST APPEAR FIRST AND IN THIS ORDER
*
*
* E:IIP ESTS STIIP,SCU
*
* E:QMF,E:IP ESTS STIQMF,SCU
*
*
*
*
*
*
* E:CRD ESTS STCRD,SCU TERMINAL READ EVENT
*
* REPORTED BY: CBC
*
*
*
*
* E:CIC ESTS1 STIRC,STI,STIO TERMINAL INPUT COMPLETE
*
* ESTS STIRCU,SCU TERMINAL INPUT COMPLETE FOR CU
*
*
* REPORTED BY: CBC
*
* SPECIAL CASE REQUIRED TO HANDLE COMPLETION BEFORE E:CRD
* IS REPORTED.
*
*****

```

STATE - EVENT TRANSITION TABLES

545
 546
 547 03 00005 00002000 A
 02 00001 1 0E A

*
 *
 E: CBL FSTS ST0B, SCU TERMINAL OUTPUT BLOCK

548
 549

*
 * REPORTED BY: C0C

550
 551
 552

*

553
 554 03 00006 8000C000 A
 02 00001 2 2E A

*
 E: CUB ESTS1 ST0C, ST0B, ST0B0 TERMINAL OUTPUT CONTINUE

555
 556 03 00007 01DF3FFE A
 02 00001 3 54 A

FSTS STN0P, EXECUTE, SCU, STI, SW, SI0W, SI0MF, SQA, SQR,)
 STI0, SQFI

557
 558

*
 * REPORTED BY: C0C

559
 560

*

STATE - EVENT TRANSITION TABLES

562
563
564
565
566
567
568
569
570
571
572
573
574
575
576
580
581
582
583
584
585
586
587
588
589
590
591
592
593
594
595
596

03 00008 CU3B2000 A
02 00002 74 A
03 00009 01C4DFFE A
02 00002 1 73 A

03 0000A CU3B2000 A
02 00002 2 74 A
03 0000B 01C4DFFE A
02 00002 3 73 A

03 0000C 81041FFE A
02 00003 73 A

03 0000D 40FBF000 A

```
*****
*
*   WARNING: THE EVENT E:CBK MUST BE AN EVEN NUMBER AND
*   MUST BE FOLLOWED BY THE EVENTS E:CEC,E:ERR
*   AND E:OFF IN THAT ORDER.
*
*   THE SEQUENCE OF EVENT NUMBERS IN THIS SERIES
*   WILL BE USED TO SELECT PROPER FLAG BITS FOR UH:DL
*
*****
*
*   E:CBK   FSTS1   STBEEA,SCU,S10W,S10MF,SQA,SQR,SQR0,SNULL
*
*   ESTS    STBEEAC,EXECUTE,SW,STI,STI0,ST0B,ST0B0,SQFI
*
*
*   REPORTED BY: C0C
*
*****
*
*   E:CEC   FSTS1   STBEEA,SCU,S10W,S10MF,SQA,SQR,SQR0,SNULL
*
*   ESTS    STBEEAC,EXECUTE,SW,STI,STI0,ST0B0,SQFI,ST0B
*
*
*   REPORTED BY: C0C
*
*****
*
*   E:ERR   FSTS1   STBEEAC,EXECUTE,SW,SQFI
*
*   ESTS    STBEEA,SCU,S10W,ST0B,ST0B0,S10MF,,
*           SQA,SQR,SQR0,SNULL,STI0,STI
```


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02 00003 1 74

STATE • EVENT TRANSITION TABLES

```

597 *
598 * REPORTED BY: KEYIN
599 *
600 *****
601 *
602 *
603 03 0000E 81CC1FFE A E:OFF,E:ABRT ESTS1 STBEEAC,EXECUTE,SW,STI,STI0,SQFI,SQA
02 00003 2 73 A
604 ESTS STBEEA,SCU,SI0MF,SI0W,ST0B,ST0B0,SWR,SQR0,)
605 03 0000F 4033F000 A SNULL
02 00003 3 74 A
606 *
607 * REPORTED BY: CBC,KEYIN
612 *
613 *****
614 *
615 *
616 03 00010 81040000 A E:WU ESTS1 STSC,SW,SQFI WAKE UP
02 00004 21 A
617 *
618 * REPORTED BY: CLOCK4
619 *
620 03 00011 7FFFFFFF A ESTS STNOP,ALL IGNORE
02 00004 1 54 A
621 *****
622 *
623 *
624 03 00012 0000P000 A E:SL ESTS SW,SCU SLEEP
02 00004 2 12 A
625 *
626 * REPORTED BY: UCAL,RBBAT,TYPR
627 *
628 *****
629 *
630 *
631 03 00013 0000P000 A E:QA ESTS STQA,SCU Q FOR ACCESS

```

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02 00004 3 83

STATE - EVENT TRANSITION TABLES

632
633
634
635
636
637
638
639 03 00014 CUFBE000 A
02 00005 54 A
640 03 00015 01041FFE A
02 00005 1 20 A
641
642
643
644
645
646
647 03 00016 8U093FFE A
02 00005 2 8B A
648 03 00017 7FFFFFFF A
02 00005 3 54 A
649
650
651
652
653
654
655 03 00018 810F1FFE A
02 00006 95 A
656 03 00019 00504000 A
02 00006 1 90 A
657
658
659
660
661

*
* REPORTED BY: C00P
*

*
E:ART ESTS1 STNOP,SCU,S10W,S10MF,SQR,SQR0,SQA,STI,ST0B,ST10,)
ST0B0,SNUL
*
ESTS STSCOM,SQFI,SW,EXECUTE
*
* REPORTED BY: RTR00T
*

*
E:UQA ESTS1 STUQA,SQA,S10W,SCU,EXECUTE
*
ESTS STNOP,ALL
*
* REPORTED BY: RBBAT
*

*
E:K0 ESTS1 STK0,SW,SQFI,EXECUTE,SQA,S10MF,S10W
*
ESTS STK0T,ST0B,STI,SQR
*
* REPORTED BY: SWAPPER
*

*

STATE - EVENT TRANSITION TABLES

```

662
663 03 0001A 00002000 A
      02 00006 2 7C A
664
665
666
667
668
669
670
671 03 0001B 00002000 A
      02 00006 3 20 A
672
673
674
675
676 03 0001C 7FFFFFFF A
      02 00007 35 A
677 03 0001D 00002000 A
      02 00007 1 18 A
      FR
678
679 04 00000 00 A
      05 00000 0200 A
      03 0001E 00002000 A
      02 00007 2 BA A
      03 0001F 7FFFFFFF A
      02 00007 3 BA A
680 04 00000 1 00 A
      05 00000 2 0200 A
      03 00020 00002000 A
      02 00008 BA A
      03 00021 7FFFFFFF A
      02 00008 1 BA A
681 04 00000 2 00 A
      05 00001 0002 A
      03 00022 00002000 A
      02 00008 2 BA A
    
```

```

*
E:AP,E:INC ESTS STASP,SCU ASSOCIATE SHARED PROCESSOR
    
```

```

*
* REPORTED BY: E:NC - MM
* E:AP - STEP,SCHED,UCAL
*
    
```

```

*
E:IQE ESTS STSCOM,SCU
    
```

```

*
* REPORTED BY: LBLT(MOVE CAL)
*
    
```

```

*****
E:IIC ESTS STI0C,ALL I/O COMPLETE
    
```

```

E:IQFI ESTS SQFI,SCU QUEUE FOR INTERRUPT
    
```

```

E:IREL EQU E:NSYMF BASE EVENT FOR RESOURCES
E:NSYMF,E:SYMF RESOURCE,R:SYMF T:BLKV,T:RELV,FLUSH
    
```

```

E:INSYMD,E:SYMD RESOURCE,R:ISYMD T:BLKV,T:RELV,FLUSH
    
```

```

E:I0CR,E:N0CR RESOURCE,R:I0CR T:BLKV,0PNUNBLOCK
    
```

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STATE - EVENT TRANSITION TABLES

	03	00023		7FFFFFFF	A		
	02	00008	3	BA	A		
682	04	00000	3	00	A	E:ICFB,E:ICBA	RESOURCE,R:ICBA T:BLKV,T:RELV,FLUSH
	05	00001	2	0200	A		
	03	00024		00002000	A		
	02	00009		BA	A		
	03	00025		7FFFFFFF	A		
	02	00009	1	BA	A		
683	04	00001		00	A	E:IND,E:IDPA	RESOURCE T:BLKV,T:RELV,FLUSH
	05	00002		0200	A		
	03	00026		00002000	A		
	02	00009	2	BA	A		
	03	00027		7FFFFFFF	A		
	02	00009	3	BA	A		
684	04	00001	1	00	A	E:IGFAC,E:IUGFAC	RESOURCE T:BLKV,UQFAC,FLUSH+NULL
	05	00002	2	0001	A		
	03	00028		00002000	A		
	02	0000A		BA	A		
	03	00029		7FFFFFFF	A		
	02	0000A	1	BA	A		
685	04	00001	2	00	A	E:INGW,E:NGR	RESOURCE,R:INGW T:BLKV,T:RELV,ERR+ABRT+EC+BRK+SPECIFIC
	05	00003		F100	A		
	03	0002A		00002000	A		
	02	0000A	2	BA	A		
	03	0002B		7FFFFFFF	A		
	02	0000A	3	BA	A		

USER FLAG TABLES

714
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717
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740

```

*
* SECOND HALF-WORD OF USER FLAGS
*
* FLAGS IN THIS GROUP ARE MOSTLY SWAPPER RELATED
*
* UH:FLG2|-----|
*      | 0 1 2 3|4 5 6 7|8 9 0 1|2 3 4 5|
*      |-----|
*      | | | | | | | | | | | | | | |
*      | | | | | | | | | | | | | | | > JIT SWAP ERROR
*      | | | | | | | | | | | | | | | > CONTEXT SWAP ERROR
*      | | | | | | | | | | | | | | | > USER SWAP ERROR
*      | | | | | | | | | | | | | | | > SWAP QUANTUM NOT SATISFIED
*      | | | | | | | | | | | | | | | > JUST SWAPPED IN
*      | | | | | | | | | | | | | | | > C&C LINE HANG-UP
*      | | | | | | | | | | | | | | | > 9
*      | | | | | | | | | | | | | | | > 8
*      | | | | | | | | | | | | | | | > TP FUNCTION
*      | | | | | | | | | | | | | | | > INTERRUPTED DURING A CAL
*      | | | | | | | | | | | | | | | > SYSTEM GHOST LOCKED OUT (REAL TIME LOCK IN CORE)
*      | | | | | | | | | | | | | | | > REAL TIME LOCK IN CORE (ABSOLUTE)
*      | | | | | | | | | | | | | | | > C&C EVENT FOR TRANSACTION PROCESSING
*      | | | | | | | | | | | | | | | > LOCK IN CORE FOR RMA (GENTLE)
*      | | | | | | | | | | | | | | | > COMMAND PROCESSOR BREAK
*      | | | | | | | | | | | | | | | > 0
  
```

742 *
 743 *
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 750 *
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 765 *
 766 *

'DB' LIST POINTER - POINTS TO THE HEAD OF A SERIES OF LINKED FOUR WORD ENTRIES DEFINING SPECIAL ACTION TO TAKE WHEN RESCHEDULING USER OR EXITING A CAL.

FLAGS FOR ERROR, ABORT, CONTROL-Y AND BREAK ARE CONTAINED IN BITS 0-3.

BITS 1, 2, AND 3 ALL ON INDICATES DATA OVERRUN WHILE THIS JOB WAS CURRENT USER.

UH:DL

```

|-----|
|         |         |         |         |         |
| 0 1 2 3|4 5 6 7|8 9 0 1|2 3 4 5 |
|-----|
| | | |
| | | | <..... DA(DB LIST) .....>
| | | | > BRK = BREAK RECEIVED
| | | | > EC = CONTROL-Y RECEIVED
| | | | > FRR = JOB IS TO BE ERRORED
| | | | > ABORT = JOB IS TO BE ABORTED
| | | | 1>>>DAOV=JOB IS TO BE PUT TO SLEEP

```

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USER FLAG TABLES

64

768
769
770
771
772
773
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775

*
* LISTS OF Q'IS FOR SELECTIONS
*
* Q'IS TO CHOSE EXECUTION FROM
BOUND 4

*
SB;SWP ESTSP SWP,SW,STI,SC10,ST0B,SQR,SQF1,SQA,SC9,SC8,SC7,
SC6,SC5,SC4,SC3,SC2,SC1,SC0,SRT

RL3

05	00004		00	A
05	00004	1	12	A
05	00004	2	16	A
05	00004	3	00	A
05	00005		00	A
05	00005	1	14	A
05	00005	2	18	A
05	00005	3	13	A
05	00006		00	A
05	00006	1	0A	A
05	00006	2	09	A
05	00006	3	08	A
05	00007		07	A
05	00007	1	06	A
05	00007	2	05	A
05	00007	3	04	A
05	00008		03	A
05	00008	1	02	A
05	00008	2	01	A
05	00008	3	00	A

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777 05 00009
 778
 779
 780
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 786
 787
 788
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 791
 792 01 0000A 02200060 A
 01 0000B 08D00000 N
 793 01 0000C 12000000 X
 794 01 0000D 6A200000 X
 795 01 0000E 2211FFFF A
 796 01 0000F 4B100006 A
 797 01 00010 22600000 A
 798 01 00011 6800019D

REPORT EVENT AND GIVE UP

USECT TEL
 BOUND 4
 DEF REG1
 REF REG1PSD
 REF REG1PSD PSD FOR IOREG(MAPPED)
 DEF T:IOREG

*
 *
 *
 *
 *
 *
 *
 *
 *

T:IOREG IS ENTERED VIA AN XPSD TO REG1PSD WITH THE DCB ADDRESS IN R6.

ALL REGISTERS ARE PRESERVED.

DEPENDING ON CIRCUMSTANCE, THE USER MAY BE SUSPENDED OR PERMITTED TO CONTINUE.

T:IOREG PUSH 6,13 SAVE REGS
 LD,0 REG1PSD GET CALLING PSD
 BAL,2 T:SAVE SAVE ENVIRONMENT
 LI,1 X11FFFF1 SCRUB DCB ADDRESS
 AND,1 6 GET DCB ADDRESS
 LI,6 E:1IP IO IN PROGRESS EVENT
 B REG2 REPORT IT

801	01	00012	64000369	PULLEU	BDR,0	T:PULLE	BRANCH IF ENV IN MAPPED STACK
802	01	00013	22100369		LI,1	T:PULLE	SET RETURN TO PULL EXIT
803	01	00014	68000000 X		B	UNMAP	UNMAP THEN PULLEXIT
805	01	00015	38D80000 X	SSE41	SW,R13	U:MISC,R4	COMPUTE TIME SINCE SCHEDULED
806	01	00016	31D00000 X		CW,R13	S:RTIR	AND CHECK FOR QMIN
807				*			S:RTIR WILL BE SET ZERO IF A
808				*			REAL TIME USER IS WAITING
809	01	00017	69100012		BL	PULLEU	NOT HAD IT AND NO RT USER WAITING
810	01	00018	32F00000 X		LW,R15	SLIQMIN	RESET FLAG TO NORMAL QMIN VALUE
811	01	00019	35F00000 X		STW,R15	S:RTIR	SINCE WE MAY HAVE HAD A RT USER
812	01	0001A	32F00000 X	SSE42	LW,15	S:HIR	
813	01	0001B	68200012		BLEZ	PULLEU	NO HIGHER PRIORITY DUDES
814	01	0001C	64000035		BDR,0	SSE43	
815	01	0001D	22000035		LI,0	SSE43	RETURN
816				*			
817				*			MOVE USER'S ENVIRONMENT FROM UNMAPPED STACK
818				*			TO USER'S JIT BEFORE PARKING HIM.
819				*			
820				*			RO = LINK
821				*			R4 = USER NUMBER (PRESERVED)
822				*			ALL OTHER REGISTERS VOLATILE
823				*			
824				*			EXITS MAPPED
825				*			
826	01	0001E	6A100000 X	SSE12	UNMAP		
827	01	0001F	72280000 N		LOAD,2	UX:JIT,4	
828	01	00020	25200009 A		SLS,2	9	
829	01	00021	223001FF A		LI,3	X:1FF!	MASK FOR PAGE DISP
830	01	00022	20200000 N		AI,2	TSTACK=J:JIT	
831	01	00023	22800013 A		LI,8	19	

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EXIT PATH CHECKS

832 01 00024 93800002 A
 833 01 00025 4A240000 A
 834 01 00026 223FFFFE A
 835 01 00027 202FFFFE A
 836 01 00028 30300000 X
 837 01 00029 022000A0 A
 838 01 0002A AA560000 X
 839 01 0002B A8540000 X
 840 01 0002C 02200090 A
 841 01 0002D 2A560009 A
 842 01 0002E 28540009 A
 843 01 0002F 92800003 A
 844 01 00030 225FFFFE A
 01 00031 13500000 X
 845 01 00032 95800002 A
 846 01 00033 32100000 A
 847 01 00034 68000000 X
 848 01 00035
 849 01 00035 60000037 A
 850 01 00036 72380000 X
 851 01 00037 72280000 X
 852 01 00038 31400000 X
 853 01 00039 6840003B
 854 01 0003A 38200000 X
 855 01 0003B 6AB001D1
 856 01 0003C 6A100000 X
 857 01 0003D 680000AD

SSE43

TISE0

MSP,8 *2
 LS,2 0,2
 LI,3 =17
 AI,2 =17
 AW,3 TSTACK
 LCI 10
 LM,5 *M24,3
 STM,5 *M24,2
 LCI 9
 LM,5 9,3
 STM,5 9,2
 LD,8 *3
 BUMP =19,5
 STD,8 *2
 LW,1 0
 B MAP
 RES 0
 DISABLE
 LB,R3 UB:US,R4
 LB,R2 UB:PRI0,R4
 CW,R4 Y4
 BAZ *+2
 SW,R2 SLISQPB
 BAL,R11 CHSE0
 UNMAP
 B SE0

***** DISABLE *****

GET CURRENT STATE
 GET CURRENT PRI0
 TEST FOR BOOST FLAG
 NO, DONT ADD PRI0 BOOST
 ADD SWAP QUAN THRESH BOOST
 AND PARK HIM
 SCHEDULE EXECUTION ONLY
 NO SWAP SCHEDULE NEEDED ON PARK

TRAP AND INTERRUPT EXITS

859
860
861
862
863
864
865
866
867
868
869
870
871
872
873
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876

01 0003E 22800044
01 0003E
01 0003E 68000384

```

*****
*
*           INTERRUPT EXIT POINTS
*
*           T: SSE = ALL INTERRUPTS BUT
*                   CLOCK 3
*
*           TISSEC = CLOCK 3
*
*****
DEF          T: SSEC
DEF          SSE0
DEF          TISSE
TISSEC      EQU          *
TISSE       EQU          *
LI, 11      SSE0          SET RETURN FROM T:SS
B           TISS          SWAP SCHEDULE
DEF         TRAPEXIT, TIACCTOV, TISSEM

```

TRAP AND INTERRUPT EXITS

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878
879
880
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893
894 01 00040 32100000 X TRAPEXIT LW,1 TSTACK TOP OF STACK ADDRESS
895 01 00041 201FFFFE A AI,1 =17 POINT BACK TO PSD IN ENVIRONMENT
896 01 00042 40100000 X AND,1 XN2 SCRUB OFF TO DOUBLE WORD BOUND
897 01 00043 33120000 A MTW,1 0,1 ADVANCE TO CAL PLUS ONE
898 01 00044 T:ACCTOV EQU $
899 01 00044 T:SSEM EQU $
900 01 00044 6A200000 X SSE0 BAL,2 T:MASTER CHECK FOR IMMEDIATE PULLE
901 01 00045 30000000 X SSE1 LAW,0 JIJIT CHECK FOR UNMAPPED
902 01 00046 69300048 BNE SSE11 MAPPED
903 01 00047 6A100000 X MAP GO MAPPED IF WE WERE UNMAPPED
904 01 00048 SSE11 RES 0
905 01 00048 32400000 X LW,4 S:CUN GET CURRENT USER NUMBER
906 01 00049 72100000 X LB,R1 JIRNST GET RUN STATUS, CHECK IT AND
907 01 0004A 51180000 X CH,R1 UHIDL,R4 USER'S DB-LIST FOR THINGS TO DO.
908 01 0004B 68700084 BCR,7 SSE5A ==> NO ABNS OR DB-ITEMS (BOTH=0).
909 01 0004C 22200000 N LI,2 JBI,FRS GET FINAL RUN STATUS INDEX
910 01 0004D 75140000 A STB,1 0,2 SAVE RUN STATUS IN JIT FOR
911 * ACCTSUM
912 01 0004E 64000050 BDR,0 $+2 CHECK FOR UNMAPPED ENV
913 01 0004F 6A00001E BAL,0 SSE12 MOVE ENV FROM MTS TO UTS
914 01 00050 60000037 A DISABLE ***** DISABLE *****

```

```

915 01 00051 52580000 X
916 01 00052 52F80000 X
917 01 00052 52F80000 X
918 01 00053 5550000D A
919 01 00054 4B500000 X
920 01 00055 55580000 X
921 01 00056 7020000D A
922 01 00057 6980012D
923 01 00058 69400142
924 01 00059 72100000 X
925 01 0005A 68300061
926 01 0005B 222000FF A
927 01 0005C 4B200000 F
928 01 0005D 72E00000 X
929 01 0005E 7520000E A
930 01 0005F 21F00080 A
931 01 00060 68400000 X
932 01 00061 7020000D A
933 01 00062 69200186
934 01 00063 69100178
935 01 00064 20500000 A
936 01 00065 68300083
937 01 00066 126A0000 A
938 01 00067 72000006 A
939 01 00068 71080000 X
940 01 00069 69200083
941 01 0006A 52100006 A
942 01 0006B 4B100000 X
943 01 0006C 21100002 A
944 01 0006D 69300071
945
946 01 0006E 21F000C2 A
947 01 0006F 69400083
948
949 01 00070 4B600000 X
950 01 00071 55680000 X
951 01 00072 68020072
    
```

```

TIDDLIST LH,5 UH:DL,4 GET DB LIST
          EQU 8
          LH,R15 UH:FLG,R4 GET USER'S FLAGS IN R15.
          STH,R5 R13 R13(0-3)= ABRT,EKR,YC,BRK FLAGS.
          AND,5 M12 CLEAR FLAGS
          STH,5 UH:DL,4 REPLACE
          LC 13 GET FLAGS TO CONDITION CODES
          BCS,8 SEABRT ABORT
          BCS,4 SEOVUN CHECK FOR DATA OVERUN USER
          LB,1 J:RNST
          BEZ SSE8
          LI,2 X:IFF1
          AND,2 J:JIT+ER0
          LB,14 J:ABC
          STB,2 14
          CI,15 TIC
          BAZ T:TELDELCCI
SSE8 LC 13 GET FLAGS AGAIN
      BCS,2 SE9 CONTROL=Y
      BCS,1 SE7 BREAK
      AI,5 0 CHECK FOR DDLIST ITEMS
      BEZ SSE5 NO
      LD,6 0,5 GET FIRST DW OF ENTRY
      LB,0 6 GET PRIORITY
      CB,0 UB:PRI0B,4 CHECK IT
      BG SSE5 NOT NOW
      LH,1 6 GET TYPE
      AND,1 M7 SCRUB
      CI,1 INTENT CHECK FOR INTENTRY
      BNE DDL1 NO
* NOTE THAT CONTENT OF UH:FLG IS IN R15
      CI,R15 INHIBIT+TIC+DIC ARE INTERRUPT ENTRIES ALLOWED
      BANZ SSE5 NO
* ALL BK, GO DO IT
      AND,R6 M12 SCRUB TO FLINK
DDL1 STH,R6 UH:DL,R4 STORE
      B DDLV,1 SWITCH ON TYPE
    
```

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TRAP AND INTERRUPT EXITS

952		01 00072		DBLV	EQU	*-1	DB LIST TYPE VECTOR
953					SREF	TIECBSTORE	
954	01	00073	68000000	X	B	TIECBSTORE	1 => STORE ECB IN USER
955					SREF	RT;INTENTRY	
956	01	00074	68000000	X	INTENTL	B	RT;INTENTRY
957		00000002			INTENT	EQU	INTENTL-DBLV
958						SREF	C0CIBRK
959	01	00075	68000000	X		B	C0CIBRK
960						SREF	C0CIRDCOMP
961	01	00076	68000000	X		B	C0CIRDCOMP
962						SREF	C0CIBRKLTR
963	01	00077	68000000	X		B	C0CIBRKLTR
964					*		
965	01	00078	00000000	A		DATA	0
966					*		
967	01	00079	E8000007	A		B	*R7
968					*		
969					*		
970					*		DB-LIST PROCESSING ROUTINES ARE CALLED WITH:
971					*		R4 = SICUN (CURRENT USER NUMBER).
972					*		R5 = DA(DB-LIST BLOCK).
973					*		R6/7 = FIRST DW OF DB-LIST BLOCK,
974					*		(EXCEPT FOR R/T INTENTRY ROUTINE)
975					*		R15 = UMIFLG (USER'S FLAGS).
976					*		REGISTERS 4 AND 5 MUST BE PRESERVED BY PROCESSING ROUTINE.
977					*		PROCESSING ROUTINE SHOULD RETURN TO T;DOLISTR.
978					*		
979						DEF	T;DOLISTR
980		01 0007A				DEF	T;DLR1
981	01	0007A	126A0000	A	T;DOLISTR	EQU	*
982	01	0007B	31600000	X		LD,6	0,5
983	01	0007C	69400080			CW,6	Y008
984	01	0007D	32200005	A		BANZ	T;DLR1
985	01	0007E	25200001	A		LW,2	5
986	01	0007F	6A100000	X		SLS,2	1
987	01	00080				BAL,1	ECBFLK
988	01	00080	6U000037	A	T;DLR1	RES	0
						DISABLF	***** DISABLE *****

989	01	00081	52580000	X	LH,5	UH:DL,4	GET DB LIST AGAIN
990	01	00082	69300052		BNE	T:DBLIST	DB IT
991	01	00083	22000004	A	LI,0	4	SET DBNT-COPY-CONTEXT FLAG AGAIN.
992	01	00084	6U000027	A	SSE5		***** ENABLE *****
993	01	00085	32D00000	X	SSE5A	ENABLE	
994	01	00086	30D00000	X	LW,13	J:IDELTAT	
995	01	00087	30D00000	X	AW,13	J:BVHTIM	
996	01	00088	30D00000	X	AW,13	J:CTIME	
997	01	00089	6U000037	A	SW,13	J:IDELTAT	
998	01	0008A	52E80000	X	DISABLEF		***** INHIBIT *****
999	01	0008B	21E00008	A	LH,R14	UH:FLG2,R4	GET SECOND USER FLAGS
1000	01	0008C	68400096		CI,R14	SQUAN	CHECK FOR ALREADY PAST SQUAN
1001	01	0008D	31D00000	X	BAZ	SSE6	YES, SKIP
1002	01	0008E	69100096		CW,R13	SLISQNT	ARE WE NEARING THE END OF SQUAN
1003	01	0008F	49400000	X	BL	SSE6	NO
1004	01	00090	31D00000	X	BR,R4	Y4	SET FLAG TO TRIGGER PRIORITY BOOST
1005	01	00091	69100096		CW,13	SL: SQUAN	
1006	01	00092	33100000	X	BL	SSE6	NOT HAD SQUAN YET
1007	01	00093	4BE00004	N	MTW,+1	S:SEVF	SWAP SET CHANGED
1008	01	00094	55E80000	X	AND,R14	XFFF7	RESET SQUAN FLAG
1009	01	00095	4B400000	X	STH,R14	UH:FLG2,R4	AND SAVE NEW FLAGS
1010	01	00096	6U000027	A	AND,R4	M8	RESET BOOST FLAG
1011	01	00097	30D00000	X	SSE6	ENABLE	***** ENABLE *****
1012	01	00098	69100015		AW,R13	J:IDELTAT	NOW CHECK FOR QUANTUM END
1013	01	00099	6400009B		BLZ	SSE41	NOT YET
1014	01	0009A	6A00001E		BDR,R0	*+2	CHECK FOR ENV IN UNMAPPED JIT
1015	01	0009B	6A300000	X	BAL,R0	SSE12	YES, MOVE TO USER JIT
1016	01	0009C	32400000	X	BAL,R3	T:ACCTEX	GIVE NEW QUAN
1017	01	0009D	6U000037	A	LW,4	S:ICUN	RESTORE CURRENT USER NUMBER
1018	01	0009E	72380000	X	DISABLEF		***** DISABLE *****
1019	01	0009F	52F80000	X	LB,3	UB:US,4	GET USERS CURRENT STATE
1020	01	000A0	32B00000	X	LH,15	UH:FLG,4	GET USER FLAGS.
1021	01	000A1	681000AB		LW,R11	S:OPC	CHECK FOR SWAP PROBLEM
1022	01	000A2	32200000	X	BGEZ	SSE7	NONE, JUST NORMAL PARK
1023	01	000A3	32B00000	X	LW,R2	S:ISUNF	GET FAILING INSWAP USER
1024	01	000A4	71B40000	X	LW,R11	S:ICUP	GET CURRENT USER PRIORITY
1025	01	000A5	682000AB		CB,R11	UBIPRIORITY,R2	AND COMPARE WITH INSWAP CANDIDATE
					BLE	SSE7	WE ARE EQUAL OR BETTER

1044
1045 01 000AA

T:SE DEF T:SE
EQU *

1047
1048
1049
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1051
1052
1053
1054
1055

```

*****
*
*           SCHEDULE FOR EXECUTION
*
*   BOTH A SWAP SCHEDULE ATTEMPT AND
*   A CALL TO SACT ARE MADE BEFORE
*   SCHEDULING ANOTHER USER.
*
*****
    
```

1057	01	000AA	6A100000	X		UNMAP		
1058	01	000AB	6AB00384			BAL,11	TISS	
1059	01	000AC	6AB00000	X		BAL,11	SACT	GOOSE THE SYMBIONTS
1060	01	000AD	6AB00000	X	SE0	BAL,R11	TISES	SCHEDULE EXECUTION FOR SLAVES
1061	01	000AE	22F00001	A		LI,15	1	
1062	01	000AF	32E00000	X		LW,R14	SIEVF	GET EVENT FLAG COUNTER
1063						REF	M6	
1064	01	000B0	12200000	X		LD,2	SB:HQ	GET FIRST SEVEN STATES
1065	01	000B1	683000B8			BEZ	SEF1	NONE, SKIP FIRST SEVEN
1066	01	000B2	49200000	X		OR,2	Y7D	SET EXPONENT FOR FLOATING SHIFT
1067	01	000B3	24200110	A		SFL,2	16	DO NORMALIZE TO FIND FIRST FULL STAT
1068	01	000B4	25200207	A		SCS,2	7	COUNT=COUNT/2
1069	01	000B5	48200000	X		AND,2	M6	SCRUB
1070	01	000B6	48200000	X		EOR,2	M6	INVERT TO FORM INDEX
1071	01	000B7	680000B9			B	*+2	
1072	01	000B8	22200008	A	SEF1	LI,2	8	START WITH EIGHTH STATE
1073	01	000B9			SIC1	RES	0	
1074	01	000B9	72440000	X		LB,4	SB:HQ,2	GET HEAD OF STATE QUEUE
1075	01	000BA	683000BF			BEZ	SIC3	
1076	01	000BB	51F80000	X	SIC2	CH,15	UHIFLG,4	IN CORE
1077	01	000BC	694000E9			BANZ	SE1	IF SO LETS RUN HIM
1078	01	000BD	72480000	X		LB,R4	UB:FL,R4	NEXT USER IN QUEUE
1079	01	000BE	693000BB			BNEZ	SIC2	
1080	01	000BF	20200001	A	SIC3	AI,2	1	NEXT STATE

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1081	01	000C0	2120000C	A
1082	01	000C1	682000B9	
1083	01	000C2	221000FF	A
1084	01	000C3	35100000	X
1085				
1086	01	000C4	220000C7	
1087	01	000C5	22200000	N
1088	01	000C6	69340000	A
1089	01	000C7	32100000	X
1090	01	000C8	30100000	X
1091				
1092	01	000C9	692000D8	
1093	01	000CA	72500000	X
1094	01	000CB	205FFFFE	A
1095				
1096		01 000CL		
1097	01	000CC	727A0000	X
1098	01	000CD	683000D0	
1099	01	000CE	21700001	A
1100	01	000CF	683000D8	
1101	01	000D0	727A0000	X
1102	01	000D1	217000C9	A
1103	01	000D2	683000D8	
1104	01	000D3	645000CC	
1105	01	000D4	32500000	X
1106	01	000D5	645000D5	
1107				
1108	01	000D6	0F000000	X
	01	000D7	04040000	A
1109		01 000D8		
1110	01	000D8	60000027	A
1111	01	000D9	32100000	X
1112	01	000DA	52200004	N
1113	01	000DB	683000DD	
1114	01	000DC	20100002	A
1115	01	000DD	520200E6	
1116	01	000DE	701200E8	

IDLO

IDL1

EXECUTION

CI,2	SEXU
BLE	SIC1
LI,1	X,FF,1
STW,1	S:ICUP
SREF	RAPURGE
LI,0	*+3
LI,2	RAPURGE
BNEZ	0,2
LW,1	S:CUIS
AW,1	GOODNGT
REF	GOODNGT
BG	IDL1
LB,5	SNDDX
AI,5	=2
REF	SSTAT
EGU	*
LB,7	SSTAT,5
BEZ	*+3
CI,7	1
BE	IDL1
LB,7	SSIG,5
CI,7	!!!
BE	IDL1
BDR,5	IDL0
LW,R5	Y004
BDR,R5	*
SCREECH	X14041
EGU	*
ENABLE	
LW,1	S:ISIP
LH,2	SB:HQ+(S:HW/4)
BEZ	*+2
AI,1	2
LH,0	C:IDL,1
LF	F:IDL,1

SCHEDULER

ONLY LOOK AT EXU STATES
CONTINUE
CLEAR CURRENT PRIORITY
FOR S:HIR TESTS

SET RETURN

GO RELEASE READ-AHEAD PAGES IF POSSIBLE

GET DELAY COUNT
AND WAIT 5 SECONDS
TO PERMIT C0C OUTPUT

CHECK FOR SWAP IN PROGRESS
CHECK FOR BOTH KINDS OF I/O WAIT
NO I/O WAIT
SET I/O BIT
GET COUNTER ADDRESS
SET FLOATING MODE BITS

HO1 13135 SEP 08, '75
 1117 01 000DF 35000000 X
 1118 01 000E0 32000000 X
 1119 01 000E1 692000E4
 1120 01 000E2 22500080 A
 1121 01 000E3 60501700 A
 1122

EXECUTION
 STW,RO S;CLOCK4
 LW,0 C:TINC
 BG *+3
 LI,5 X'80'
 WD,5 X'1700'

SCHEDULER
 SET CLOCK TO ACCOUNT IDLE
 CHECK TIME OF DAY CLOCK
 =POSITIVE, YUP ABK
 =NEG, BAD SB
 ... TRIGGER HIM
 FALL THROUGH TO IDLE LOOP

1124
1125
1126
1127
1128
1129
1130
1131
1132
1133
1134
1135
1136
1137
1138
1139
1140

```

*****
*
*           I D L E   L O O P
*
*   THE REASON FOR BEING IDLE IS DISPLAYED
*   IN THE FLOATING MODE CONTROL BITS OF
*   THE PROGRAM STATUS DOUBLEWORD:
*
*           F   F   F
*           S   Z   N
*           -   -   -
*           1   0   0   =>   PURE IDLE, NOTHING TO DO
*           0   0   1   =>   IDLE WITH SWAP IN PROGRESS
*           0   1   1   =>   IDLE WITH I/O AND SWAP IN PROGRESS
*           1   1   0   =>   IDLE WITH I/O IN PROGRESS
*
*****

```

1142 01 000E4 2E000000 A

1144

1145

1146

1147

1148 01 000E5 680000AA

1149 01 000E6 0000 N
01 000E6 2 0000 N
01 000E7 0000 N
01 000E7 2 0000 N

1150 01 000E8 04 A
01 000E8 1 01 A
01 000E8 2 06 A
01 000E8 3 03 A

1151

```

WAIT,0 0 *** IDLE LOOP ***

*
*   DRIVEN OUT OF WAIT BY INTERRUPTS
*   AT LEAST EVERY 2 MILLISECONDS
*   FALLING THROUGH TO SCHEDULE FOR
*   BOTH SWAPS AND EXECUTION
*   GO SCHEDULE AGAIN
C:IDL B T:SE C:IDLE,C:IDLES,C:IDLEW,C:IDLESW
DATA,2

F:IDL DATA,1 4,1,6,3

REF C:IDLEW,C:IDLESW

```

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01 000E9

PLACE USER IN EXECUTION

78

1153
1154
1155
1156
1157
1158
1159

```
SE1      EQU      *      RETURN HERE FROM SIC WITH A USER
*
*****
*
*          LOAD MAP AND ACCESS
*
*****
```

1161	01	000E9	35400000	X	STW,R4	S:ICUN	DECLARE CURRENT USER NUMBER
1162	01	000EA	72B80000	N	LOAD,11	UX:JIT,4	GET JIT PAGE NUMBER
1163	01	000EB	25B00009	A	SLS,11	9	AND MAKE IT WORD ADDRESS
1164	01	000EC	12800000	X	LD,8	S:ACCW	GET SKELETON CW FOR ACCES
1165	01	000ED	4980000B	A	OR,8	11	MERGE IN PHYS PAGE
1166	01	000EE	6F840000	A	LPC,8	0	LOAD ACCESS LOCKS
1167	01	000EF	12800000	X	LD,8	S:MAPCW	GET SKELETON FOR LOADING MAP
1168	01	000F0	4980000B	A	OR,8	11	MERGE PAGE OF JIT
1169	01	000F1	6F880000	N	LDMAP,R	0	LOAD ENTIRE MAP
1170	01	000F2	6U000037	A	DISABLF		
1171	01	000F3	52F80000	X	LH,R15	UH:FLG,R4	GET FLAGS
1172	01	000F4	21F00001	A	CI,R15	RTR	MAKE SURE SWAPPER DIDNIT STEAL HIM
1173	01	000F5	684000AA		BAZ	T:SE	YES IT DID, RECYCLE
1174	01	000F6	21F01000	A	CI,15	SJAC	CHECK FOR SPECIAL JIT ACCESS
1175	01	000F7	684000FA		BAZ	*+3	NONE
1176	01	000F8	12800000	X	LD,8	S: SJACW	GET CONTROL WORD
1177	01	000F9	6F840000	A	LPC,8	0	AND LOAD JIT ACCESS
1178	01	000FA	72380000	X	LB,3	UB:US,4	GET CURRENT STATE
1179	01	000FB	2220000D	A	LI,2	SCU	
1180	01	000FC	72580000	X	LB,5	UB:PRIO,4	GET USERS PRIORITY
1181	01	000FD	71580000	X	CB,R5	UB:PRIOB,R4	IS HE AT BASE
1182	01	000FE	68100101		BGE	*+3	YES, DONT DECREMENT
1183	01	000FF	30500000	X	AW,R5	S:PRIODEC	DECREMENT CURRENT PRIO
1184	01	00100	75580000	X	STB,R5	UB:PRIO,R4	SAVE NEW PRIO
1185	01	00101	35500000	X	STW,5	S:CUP	ANNOUNCE IT
1186	01	00102	33F00000	X	MTW,-1	S:HIR	ONE LES HIR
1187	01	00103	6AB001B0		BAL,11	RCE4	CHANGE STATE TO SCU ***** ENABLE **
1188	01	00104	6A100000	X	MAP		

PLACE USER IN EXECUTION

1189	01	00105	52E80000	X	LH,14	UH:FLG2,4	GET SECOND FLAGS
1190	01	00106	4BE0000E	N	AND,14	XFFFF	RESET CAL INTERRUPT BIT
1191	01	00107	21E00007	A	CI,14	7	CHECK FOR SWAP ERRORS
1192	01	00108	68400116		BAZ	SE4D	NONE
1193	01	00109	25E0017D	A	SLD,14	=3	ERROR FLAGS TO R15
1194	01	0010A	25E00003	A	SLS,14	3	CLEAR FLAGS
1195	01	0010B	55E80000	X	STH,14	UH:FLG2,4	SAVE NEW FLAGS
1196	01	0010C	7020000F	A	LC	15	GET SWAP ERROR FLAGS
1197	01	0010D	69400000	X	BCS,4	T:DELUSZAP	OFF THIS USER - CONTEXT ERROR
1198	01	0010E	68200111		BCR,2	SE4D1	USER AREA ERROR
1199	01	0010F	32500000	X	LW,5	S:CUN	USER NUMBER
1200	01	00110	68000000	X	B	T:SCRATCH&USER	
1201	01	00111	60000037	A	SE4D1	DISABLF	***** DISABLE *****
1202	01	00112	52680000	X	LH,R6	UH:DL,R4	GET DB LIST
1203	01	00113	49600000	X	BR,6	X4000	SET ERROR FLAG
1204	01	00114	5b680000	X	STH,6	UH:DL,4	SAVE
1205	01	00115	60000027	A	ENABLE		***** ENABLE *****
1206		01 00116			SE4D	EQU	*
1207		00000001			DB	PERFORM	
1208	01	00116	6A600000	X	BAL,6	ACTIVATE	
1209					FIN		
1210	01	00117	21E00010	A	CI,R14	SWAPD	CHECK FOR JUST SWAPPED IN
1211	01	00118	6840011D		BAZ	SE4F	NO
1212	01	00119	4BE00005	N	AND,R14	XFFEF	CLEAR THE JUST SWAPPED IN FLAG
1213		00000009	S		XFFEF	EQU	NB3100+5
1214		00000004	S		XFFF7	EQU	NB3100+4
1215	01	0011A	6A300000	X	BAL,3	T:ACCTEX	ACCOUNT EXEC TIME UP TO NOW
1216	01	0011B	32400000	X	LW,4	S:CUN	
1217	01	0011C	55E80000	X	STH,14	UH:FLG2,4	SAVE SECOND FLAGS
1218	01	0011D	22000000	N	SE4F	LI,R0	SET CLOCK TO OVERHEAD
1219	01	0011E	35000000	X	STW,R0	S:CLOCK4	AND SET IN CLOCK POINTER
1220	01	0011F	32D00000	X	LW,R13	J:DELTAT	COMPUTE
1221	01	00120	30D00000	X	AW,R13	J:OVHTIM	EFFECTIVE
1222	01	00121	30D00000	X	AW,R13	J:CTIME	QUANTUM
1223	01	00122	35D80000	X	STW,R13	U:MISC,R4	SAVE IN MISC
1224	01	00123	6A200000	X	BAL,2	T:MASTER	
1225	01	00124	52580000	X	LH,5	UH:DL,4	GET DB LIST

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1226	01	00125	69300045
1227	01	00126	32A00000 X
1228	01	00127	68300369
1229	01	00128	32200000 X
1230	01	00129	69200369
1231	01	0012A	22000000 A
1232	01	0012B	35000000 X
1233	01	0012C	6800018E

PLACE USER IN EXECUTION

BNE	SSE1	GO DECODE
LW,10	J:TIMENT	GET STIMER ENTRY ADDRESS.
BEZ	T:PULLE	NONE
LW,2	J:UTIMER	CHECK TIMER
BGZ	T:PULLE	NOT UP YET
LI,0	0	
STW,0	J:TIMENT	ONLY ONE ENTRY PER CAL.
B	ALTENT	GO TO STIMER ENTRY ADDRESS

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PLACE USER IN EXECUTION

1235	01	0012D		SEABRT	RES	0	
1236	01	0012D	32100000 X	T:0FF	LW,1	J:ACCN	
1237	01	0012E	69300131		BNEZ	0FF10	
1238	01	0012F	32100001 N		LW,1	SYSACT+1	GET BLANKS
1239	01	00130	35100000 X		STW,1	J:ACCN	
1240	01	00131		0FF10	RES	0	
1241	01	00131	32400000 X		LW,4	S,CUN	CHECK IF THIS IS
1242	01	00132	52180000 X		LH,1	UHIFLG2,4	A LINE-HANGUP USER
1243	01	00133	21100020 A		CI,R1	HANGUP	CHECK FOR HANGUP FLAG
1244	01	00134	22100010 A		LI,R1	X'10'	ASSUME NOT (CC2 UNCHANGED)
1245	01	00135	68400137		BAZ	NOTLNF	NOT HANGUP, RNST = X'10'
1246	01	00136	22100008 A		LI,R1	8	LINE HANGUP, RNST = X'08'
1247	01	00137		NOTLNF	RES	0	
1248	01	00137	75100000 X		STB,1	J:RNST	
1249	01	00138	22D00180 A		LI,R13	TIC+BAT	TEL IN CONTROL AND BATCH FLAGS
1250	01	00139	45D0000F A		CS,R13	R15	CHECK FOR PRE CCI ABORT
1251	01	0013A	69300000 X		BNE	T:TELDELCCI	NO, EXIT:
1252	01	0013B	68000083		B	SSE5	YES, IGNORE FOR NOW
1253	01	0013C		SEERR	RES	0	
1254	01	0013C	6U000027 A		ENABLE		
1255	01	0013D	22100003 A		LI,1	3	
1256	01	0013E	35100000 F		STW,1	J:JIT+ER0	
1257	01	0013F	22E000B4 A		LI,14	X'84'	
1258	01	00140	22100020 A		LI,1	X'20'	
1259	01	00141	68000000 X		B	SETRNST	
1260					REF	SETRNST	
1261	01	00142	6820013C	SE0VRUN	BCR,2	SEERR	MUST HAVE ALL THREE BITS SET
1262	01	00143	6810013C		BCR,1	SEERR	
1263	01	00144	22100003 A		LI,R1	3	SLEEP FOR 3 TICKS
1264	01	00145	35180000 X		STW,R1	U:IMISC,4	
1265	01	00146	22600012 A		LI,R6	SW	WAIT STATE
1266	01	00147	6AB00195		BAL,11	T:REG	
1267	01	00148	68000044		B	SSE0	START OVER

```

1269
1270 01 00149
1271
1272
1273
1274
1275
1276
1277
1278
1279 01 00149 12C00006
1280 01 0014A 15C00000 X
1281
1282 01 0014B
1283 01 0014B 21F00040 A
1284 01 0014C 69400169
1285 01 0014D 20F00040 A
      01 0014E 55F80000 X
1286 01 0014F 72280000 X
1287 01 00150 68300166
1288 01 00151 20FFFFFF A
      01 00152 55F80000 X
1289 01 00153 73F40000 X
1290 01 00154 52E80000 X
1291 01 00155 21E00800 A
1292 01 00156 6840015C
1293 01 00157 73F40000 X
1294 01 00158 6920015C
1295 01 00159 72240000 X
1296 01 0015A 3A200002 A
1297 01 0015B 66200000 X
1298 01 0015C 6A200559
1299 01 0015D 2260001A A
1300 01 0015E 6AB00195
1301 01 0015F 21E00800 A
1302 01 00160 68400166
1303 01 00161 73020000 X
    
```

```

DEF          DELTAGO
RES          0
*           GO TO DELTA. BRING DELTA INTO CORE IF NECESSARY.
*           ASSUMES DELTA ASSOCIATED, NOT TEL-IN-CONTROL.
*           REGISTERS MUST BE SET AS FOLLOWS:
*           R10 = DELTA ENTRY ADDRESS.
*           R4  = USER NUMBER. (CURRENT USER).
*           R15 = USER'S FLAGS (UHIFLG). DELA SET, TIC RESET.
*           R0 CONTENTS GO INTO TOP WORD OF DELTA'S STACK AFTER
*           COPYING TSTACK CONTEXT TO DELTA'S STACK.
LD,R12      19SPD
STD,R12     TSTACK
DEF          DELTAGOT
RES          0
CI,15      DIC
BANZ       DELTAIN
SETST      DIC
LB,2       UBIASP,4
BEZ        DELNOASP
RSETST     RTR
MTB,-1     PB:UC,2
LW,14      UHIFLG2,4
CI,14      X'800'
BAZ        NOICT
MTB,-1     PB:ICT,2
BG         NOICT
LB,2       PB:PSZ,2
LCW,2      2
AWM,2      S:RTCORE
NOICT      BAL,2
           LI,6
           E:AP
           BAL,11
           CI,14
           BAZ
           MTB,0
           PB:ICT,1
           CRANK STACK DOWN TO 1 ENVIRONMENT.
           (DON'T CRANK STACK ON TRAPS)
           DIC = DELTA IN CORE & ACCESSIBLE.
           ---> SO JUST DO THE STACK COPY.
           IF NOT DIC, WE'LL MAKE IT SO.
           ASP NONZERO = DELTA NOT AROUND.
           ---> NO ASP; DELTA'S IN CORE NOW.
           HAVE ASP, SO MUST FETCH DELTA.
           DECREMENT ASP (LIBRARY) USE COUNT.
           LOCKED IN CORE
           NO
           STILL LOCKED
           YES
           NO, GET PSZ
           AND TAKE IT
           FROM RTCORE
           READ DELTA INTO CORE.
           LOCKED IN CORE
           NO
           ALREADY LOCKED
    
```

Line	Mode	Address	Hex	Label	Op	Comment
1304	01	00162	69200165	BG	*+3	YES
1305	01	00163	72E20000	LB,14	PB:PSZ,1	NO, GET PSZ
1306	01	00164	66E00000	AWM,14	S;RTCORE	AND ADD IT IN
1307	01	00165	73120000	MTB,1	PB:ILCT,1	
1308	01	00166	32600000	DELNBASP LW,6	0	(SAVE R0 ACROSS T:PAC)
1309	01	00167	6AB00000	BAL,11	T:PAC	LOAD DELTA'S ACCESS-PROTECTION.
1310	01	00168	32000006	LW,0	6	(RESTORE R0)
1311	01	00169	22100000	DELTA IN LI,1	SPDBASE	R1 => DELTA'S STACK.
1312	01	0016A	3260000A	LW,6	10	SAVE ENTRY ADDR ACROSS T:UTSXTS.
1313	01	0016B	6A400332	BAL,4	T:UTSXTS	COPY TSTACK TO DELTA STACK.
1314	01	0016C	6A400175	BAL,R4	DELSTBAD	(BAD-STACK RETURN; GO TIDY IT UP).
1315	01	0016D	49600008	OR,6	SMPSD	BUILD A R E L I A B L E PSD
1316	01	0016E	32700009	LW,7	SMPSD+1	AROUND DELTA'S ENTRY ADDRESS
1317	01	0016F	95600003	STD,6	*3	AND INSTALL IN TSTACK.
1318	01	00170	72800000	LB,R8	J:RNST	
1319	01	00171	3586000A	STW,R8	R8*2,3	PUT RNST INTO R8 IN TSTACK.
1320	01	00172	22800000	LI,R8	0	
1321	01	00173	75800000	STB,R8	J:RNST	ZERO OUT RNST.
1322	01	00174	68000044	B	T:ISSEM	-----> RESCHEDULE, THEN GO TO DELTA.
1323	01	00175	32300000	DELSTBAD LW,R3	TSTACK	** DELTA'S STACK IS BAD, FIX R3
1324	01	00176	203FFFFE	AI,R3	=17	** TO POINT TO PSD IN TSTACK.
1325	01	00177	68080000	B	0,R4	
1326				*		
1327	01	00178	220FFFFFF	SE7 LI,0	=1	BREAK. R0= CODE FOR BREAK (-1).
1328	01	00179	21F00080	CI,15	TIC	TIC = COMMAND PROCESSOR IN CONTROL
1329	01	0017A	69400181	BANZ	SE6	---> GO IF C.P. IN CONTROL.
1330	01	0017B	21F00400	CI,15	DELA	DELA = DELTA ASSOCIATED.
1331	01	0017C	68400184	BAZ	SE6A	---> GO IF USERCONTROL, Nodelta.
1332	01	0017D	22A0000D	LI,10	SPPBASE+X'D'	R10= DELTA BREAK ENTRY ADDRESS.
1333	01	0017E	68000149	B	DELTA00	-----> GO TO DELTA.
1334				DEF	SE7A	SLAVELINE BREAK. R0= LINE NUMBER.
1335	01	0017F	21F00080	SE7A CI,15	TIC	TIC = COMMAND PROCESSOR IN CONTROL.
1336	01	00180	68400184	BAZ	SE6A	---> GO IF USER IN CONTROL.
1337	01	00181	52280000	SE6 LH,2	UH:FLG2,4	SEE IF CP
1338	01	00182	21204000	CI,2	X:4000'	HAS BREAK CONTROL
1339	01	00183	68400044	BAZ	T:ISSEM	---> NO, IGNORE BREAK
1340	01	00184	32A00000	SE6A LW,10	J:INTENT	R10= USER/C.P. BREAK ADDRESS.

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PLACE USER IN EXECUTION

1341	01	00185	6930018E		BNEZ	ALTENT	***> IF M:INT, GO TO USER/C.P.
1342				*			
1343	01	00186	21F00080 A	SE9	CI,15	TIC	CTL-Y, OR BREAK WITH NO M:INT.
1344	01	00187	69400044		BANZ	T:SSEM	***> IGNORE IF C.P. IN CONTROL.
1345	01	00188	52280000 X		LH,2	UH:FLG2,4	
1346	01	00189	21200800 A		CI,2	RTHOLD	IS USER 'LOCKED-IN-CORE'
1347	01	0018A	69400044		BANZ	T:SSEM	YES...IGNORE 'YC'/'BREAK'
1348	01	0018B	22100002 A		LI,1	2	TELL C.P. THAT
1349	01	0018C	47100000 X		STS,1	JITELFLGS	BRK/YC RECEIVED.
1350	01	0018D	68000000 X		B	T:ECCP	
1351					REF	T:ECCP	
1352				*			
1353	01	0018E		ALTENT	RES	0 (R0=USERSTACK FLAGWORD, R10=USERROUTINE ADDR)	
1354	01	0018E	32100000 X		LW,1	J;TCB	BREAK/TIMEOUT WITH USER CONTROL.
1355	01	0018F	22B1FFFF A		LI,11	X'1FFFF'	COPY ADDR ONLY INTO TSTACK PSD.
1356	01	00190	6A400332		BAL,4	T:UTSXTS	COPY TSTACK TO USER TCB STACK.
1357	01	00191	68000193		B	ALTERR	***> ERROR IN USER STACK.
1358	01	00192	68000369		B	T:PULLE	GO TO USER.
1359				*			
1360	01	00193	22E000A3 A	ALTERR	LI,14	X'A3'	*** ERROR IN BREAK/STIMER.
1361	01	00194	68000000 X		B	T:ABORTM	***

```

1363 *
1364 *
1365 *
1366 *
1367 *
1368 *
1369 *
1370 *
1371 *
1372 *
1373 *
1374 *
1375 *
1376 *
1377 *
1378 *
1379 *
1380 01 00195 0F000000 X T:REG DEF T:REG
1381 01 00196 02200060 A REG1 XPSD,0 REG1PSD GET CURRENT PSD AND GO MAPPED
01 00197 05D00000 N PUSH 6,13 SAVE 13,14,15,0,1,2
1382 01 00198 3200000B A LW,R0 R11 RETURN
1383 01 00199 221E0000 A LI,R1 X'E0000' MASK IT INTO
1384 01 0019A 4A000000 X LS,R0 REG1PSD PSD
1385 01 0019B 32100001 N LW,R1 REG1PSD+1 GET SECOND HALF
1386 01 0019C 6A200000 X BAL,R2 TISAVE SAVE ENVIRONMENT
1387 01 0019D 6A200000 X REG2 BAL,R2 TISMPFLG SET MASTER ONLY FLAG
1388 01 0019E 22B000AA LI,R1 T:SE SET RETURN TO SCHEDULE
1389 RE=SCHEDULE
1390 *
1391 *
1392 *
1393 *
1394 *
1395 *
1396 *
1397 01 0019F 32400000 X T:RE LW,R4 S:GUN GET CURRENT USER NUMBER
1398 B RCE0 WADE INTO EVENT REPORTING

```

T:REG REPORT EVENT AND GIVE UP

R6 = EVENT NUMBER
R11 = LINK
ALL REGISTERS PRESERVED

T:REG MUST BE CALLED MAPPED AS IT ASSUMES THAT WE MAY BLOCK THE CURRENT USER FOR SOME UNSATISFIED CONDITION. THE ENVIRONMENT EXISTING AT THE TIME T:REG IS CALLED IS SAVE IN THE CURRENT USER'S JIT AND THEN THE EVENT IS REPORTED. SOME EVENT-CIRCUMSTANCE COMBINATIONS WILL CAUSE AN IMMEDIATE T:PULLF. NORMALLY, HOWEVER THE USER WILL BE SUSPENDED AND A NEW USER SCHEDULED AT T:SE.

DEF	T:REG	
XPSD,0	REG1PSD	GET CURRENT PSD AND GO MAPPED
PUSH	6,13	SAVE 13,14,15,0,1,2
LW,R0	R11	RETURN
LI,R1	X'E0000'	MASK IT INTO
LS,R0	REG1PSD	PSD
LW,R1	REG1PSD+1	GET SECOND HALF
BAL,R2	TISAVE	SAVE ENVIRONMENT
BAL,R2	TISMPFLG	SET MASTER ONLY FLAG
LI,R1	T:SE	SET RETURN TO SCHEDULE
		RE=SCHEDULE

T:RE REPORT EVENT FOR CURRENT USER

R11 = LINK
R6 = EVENT (MODIFIED)
ALL OTHER REGISTERS VOLATILE

LW,R4 S:GUN GET CURRENT USER NUMBER
B RCE0 WADE INTO EVENT REPORTING

1400				*			T:RCE = REPORT CUC EVENT
1401				*			T:IRE = REPORT EVENT FOR CURRENT
1402				*			USER
1403				*			T:IRUE = REPORT EVENT FOR SPECIFIED
1404				*			USER
1405				*			7 = LINE# (RCE ONLY)
1406				*			6 = EVENT#
1407				*			5 = USER# (RUE ONLY)
1408	01	001A0	60000037	A	RCE0	DISABLEF	EVENT REPORTING MUST BE DONE
1409	01	001A1	33100000	X		MTW,+1 S:IEVF	SET EVENT FLAG-COUNTER
1410					*		DISABLED
1411	01	001A2	72380000	X		LB,3 UB:US,4	GET CURRENT STATE
1412	01	001A3	32C60000	X		LW,12 X1,3	GET BIT CORRESPONDING TO IT
1413	01	001A4	31CC0000	03	RCE1	CW,12 S:SET,6	ARE WE AT THE RIGHT PLACE
1414	01	001A5	694001AC			BANZ RCE3	YES
1415	01	001A6	32FC0000	03		LW,15 S:SET,6	CHECK FOR CONTINUATION
1416	01	001A7	691001AA			BLZ RCE2	YES
1417	01	001A8	0F000000	X		SCREECH X'02'	BAD STATE EVENT COMBINATION
1418	01	001A9	00020000	A			
1419							
1420							
1421							
1422							
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1433							
1434							
1435							

S SCREECH CODE: 02 CALLED FROM SCHED *

S MESSAGE: USER'S STATE AND EVENT ARE INCONSISTENT *

S SIGNIFICANT REGISTERS: *

S R3 = USER'S CURRENT STATE *

S R4 = USER NUMBER *

S R6 = EVENT NUMBER (MAY HAVE BEEN INCREMENTED) *

S R11 = RETURN ADDRESS FOR EVENT REPORTING *

S R12 = BIT CORRESPONDING TO CURRENT STATE *

S R15 = REGISTER USED FOR CONTINUATION CHECK *

S BIT 0 WILL BE EQUAL TO ZERO *

S REMARKS: USUALLY A SOFTWARE CHECK 02 INDICATES THAT SOME *

S PIECE OF THE SYSTEM PASSED BAD ARGUMENTS TO T:RE, *

S T:IRUE OR T:IRUE. THE SOLUTION TO THE PROBLEM WILL *

S GENERALLY COME FROM DETERMINING WHO CALLED THE *

S EVENT REPORTING LOGIC AND WHY. *

E V E N T R E P O R T I N G

1436	01	001AA	20600001	A	RCE2	AI,6	1	NEXT ENTRY
1437	01	001AB	680001A4			B	RCE1	CONTINUE
1438	01	001AC	722C0000	02	RCE3	LB,2	SB:SET,6	GET ACTION CODE
1439	01	001AD	52F80000	X		LH,15	UH:FLG,4	GET FLAGS FOR MANY ST EVENTS
1440	01	001AE	2120001F	A		CI,2	SNSTS	CHECK FOR SPECIAL ACTION
1441	01	001AF	692401FC			BG	S;TRNSVEC=X'20',2	YES GO TO IT
1442					*			
1443					*			STATE CHANGE FOR NON-EXECUTABLE STATES
1444					*			
1445	01	001B0	72580000	X	RCE4	LB,5	UB:BL,4	GET BACK LINK
1446	01	001B1	72180000	X		LB,1	UB:FL,4	AND FORWARD LINK
1447	01	001B2	693001B4			BNEZ	*+2	NOT TAIL
1448	01	001B3	75560000	X		STB,5	SB:TQ,3	SET NEW TAIL
1449	01	001B4	20500000	A		AI,5	0	CHECK FOR HEAD
1450	01	001B5	693001B7			BNEZ	*+2	NO
1451	01	001B6	75160000	X		STB,1	SB:HQ,3	SET NEW HEAD
1452	01	001B7	75520000	X		STB,5	UB:BL,1	CROSS LINK
1453	01	001B8	751A0000	X		STB,1	UB:FL,5	REMAINING QUEUE MEMBERS
1454	01	001B9	22100000	A		LI,1	0	ZAPPER
1455	01	001BA	20400000	A		AI,4	0	CHECK FOR QUEUE TO HEAD
1456	01	001BB	691001C3			BLZ	T:QH	YES
1457	01	001BC	75180000	X	T:QT	STB,1	UB:FL,4	ZAP FLINK SINCE WE ARE AT TAIL
1458	01	001BD	72140000	X		LB,1	SB:TQ,2	GET PREVIOUS TAIL
1459	01	001BE	683001ED			BEZ	CHSE25	EMPTY QUEUE
1460	01	001BF	75440000	X		STB,4	SB:TQ,2	SET NEW TAIL
1461	01	001C0	75180000	X		STB,1	UB:BL,4	BACK LINK TO PREVIOUS TAIL
1462	01	001C1	75420000	X		STB,4	UB:FL,1	AND MAKE HIM POINT TO NEW GUY
1463	01	001C2	6800024E			B	CHS1	DONE
1464	01	001C3	75180000	X	T:QH	STB,1	UB:BL,4	SET BACK LINK TO ZERO
1465	01	001C4	72140000	X		LB,1	SB:HQ,2	GET CURRENT HEAD
1466	01	001C5	683001ED			BEZ	CHSE25	EMPTY QUEUE
1467	01	001C6	75440000	X		STB,4	SB:HQ,2	AND SET NEW HEAD
1468	01	001C7	75420000	X		STB,4	UB:BL,1	SET BLINK TO PREVIOUS HEAD
1469	01	001C8	75180000	X		STB,1	UB:FL,4	SET FLINK TO PREVIOUS HEAD
1470	01	001C9	6800024E			B	CHS1	DONE

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EXECUTABLE STATE CHANGE

1509	01	001DE	22200002	A		LI,2	SCO	QUEUE INTO SCO FOR HIGH PRIORITY BGRD
1510	01	001DF	72580000	X	CHSE2	LB,5	UB:BL,4	GET BLINK *
1511	01	001E0	72180000	X		LB,1	UB:FL,4	AND FLINK *
1512	01	001E1	693001E3			BNEZ	*+2	NOT AT TAIL * UNLINK
1513	01	001E2	75560000	X		STB,5	SB:TO,3	SET NEW TAIL *
1514	01	001E3	20500000	A		AI,5	0	CHECK FOR AT HEAD
1515	01	001E4	693001E6			BNEZ	*+2	NO
1516	01	001E5	75160000	X		STB,1	SB:HQ,3	YES, SET NEW HEAD
1517	01	001E6	751A0000	X		STB,1	UB:FL,5	CROSS LINK REMAINING MEMBERS
1518	01	001E7	75520000	X		STB,5	UB:BL,1	IN OLD STATE QUEUE
1519	01	001E8	72580000	X		LB,5	UB:PRIORITY,4	GET PRIORITY
1520	01	001E9	20400000	A		AI,4	0	CHECK FOR QUEUE TO HEAD
1521	01	001EA	69100206			BLZ	CHSEH	YES
1522	01	001EB	72140000	X		LB,1	SB:TO,2	GET TAIL OF NEW QUEUE
1523	01	001EC	693001F2			BNE	CHSE3	NOT EMPTY
1524	01	001ED	75180000	X	CHSE25	STB,1	UB:BL,4	NULL QUEUE
1525	01	001EE	75180000	X		STB,1	UB:FL,4	ZAP LINKS
1526	01	001EF	75440000	X		STB,4	SB:TO,2	SET HEAD AND
1527	01	001F0	75440000	X		STB,4	SB:HQ,2	TAIL POINTERS
1528	01	001F1	6800024E			B	CHS1	EXIT
1529	01	001F2	71520000	X	CHSE3	CB,5	UB:PRIORITY,1	COMPARE PRIORITIES
1530	01	001F3	681001F7			BGE	CHSE4	THIS IS THE PLACE
1531	01	001F4	72120000	X		LB,1	UB:BL,1	BLINK BACK
1532	01	001F5	693001F2			BNE	CHSE3	AND TRY AGAIN
1533	01	001F6	680001C3			B	T:QH	AT THE HEAD OF THIS Q
1534	01	001F7	75180000	X	CHSE4	STB,1	UB:BL,4	SET BACK LINK
1535	01	001F8	72520000	X		LB,5	UB:FL,1	GET FORWARD
1536	01	001F9	693001FE			BNEZ	CHSE5	NOT AT TAIL
1537	01	001FA	75440000	X		STB,4	SB:TO,2	SET NEW TAIL
1538	01	001FB	75580000	X		STB,5	UB:FL,4	ZAP FORWARD LINK
1539	01	001FC	75420000	X		STB,4	UB:FL,1	LINK TO PREVIOUS TAIL
1540	01	001FD	6800024E			B	CHS1	EXIT
1541	01	001FE	754A0000	X	CHSE5	STB,4	UB:BL,5	SET BLINK FOR NEXT GUY
1542	01	001FF	75580000	X		STB,5	UB:FL,4	AND POINT TO HIM
1543	01	00200	75420000	X		STB,4	UB:FL,1	LINK TO PREVIOUS GUY
1544	01	00201	6800024E			B	CHS1	
1545	01	00202			CHSRT	RES	0	GOT A REAL TIME GUY

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EXECUTABLE STATE CHANGE

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1546	01	00202	22200001	A		LI,2	SRT	STATE REAL TIME
1547	01	00203	72580000	X		LB,5	UB:PRIOB,4	GET BASE PRIORITY
1548	01	00204	75580000	X		STB,5	UB:PRIO,4	AND MAKE IT CURRENT - DONT FLOAT RT
1549	01	00205	680001DF			B	CHSE2	CHAIN HIM IN
1550	01	00206	72140000	X	CHSEH	LB,1	SB:HQ,2	GET CURRENT HEAD
1551	01	00207	683001ED			BEZ	CHSE25	NULL QUEUE
1552	01	00208	71520000	X	CHSEH1	CB,5	UB:PRIO,1	COMPARE PRIORITIES
1553	01	00209	6910020D			BL	CHSEH2	AT THE RIGHT SPOT NOW
1554	01	0020A	72120000	X		LB,1	UB:FL,1	FLINK ON
1555	01	0020B	69300208			BNE	CHSEH1	AND COMPARE AGAIN
1556	01	0020C	680001BC			B	T:QT	WE GO ON THE TAIL
1557	01	0020D	75180000	X	CHSEH2	STB,1	UB:FL,4	SET NEW FORWARD LINK
1558	01	0020E	72520000	X		LB,5	UB:BL,1	GET HIS OLD BACK LINK
1559	01	0020F	69300214			BNEZ	CHSEH3	NOT AT HEAD
1560	01	00210	75440000	X		STB,4	SB:HQ,2	SET NEW HEAD
1561	01	00211	75580000	X		STB,5	UB:BL,4	ZAP BLINK
1562	01	00212	75420000	X		STB,4	UB:BL,1	MAKE HIM POINT BACK
1563	01	00213	6800024E			B	CHS1	EXIT
1564	01	00214	754A0000	X	CHSEH3	STB,4	UB:FL,5	MAKE PREVIOUS GUY POINT TO US
1565	01	00215	75580000	X		STB,5	UB:BL,4	POINT BACK AT HIM
1566	01	00216	75420000	X		STB,4	UB:BL,1	SET NEXT GUYS BLINK TO US
1567	01	00217	6800024E			B	CHS1	EXIT
1568					*			
1569	01	00218	64000037	A	T:CHS	DISABLF		
1570	01	00219	68000180			B	RCE4	
1571	01	0021A	20200002	A	CHSE6	AI,R2	SCO	ADD IN BASE STATE NUMBER
1572	01	0021B	68000180			B	RCE4	AND DO SIMPLE STATE CHANGE

SPECIAL TRANSITIONS

1574				*			
1575				* SPECIAL ROUTINES FOR RE			
1576				*			
1577		01 0021G		S:TRNSVEC EQU	*		
1578	01	0021C	6A1001CB	STSC0M BAL,1	T:CHSE	COMPUTE	
1579	01	0021D	6A1001CB	STSC BAL,1	T:CHSE	SPECIAL COMPUTE	
1580	01	0021E	6A1001CB	STI0CC BAL,1	T:CHSE	I/O COMPLETE	
1581	01	0021F	6A100220	STIRC BAL,1	INTERACTIVE	INTERACTIVE	
1582		01 0021E		ST0C EQU	STI0CC	TERMINAL OUTPUT CONTINUE	
1583		01 0022U		INTERACTIVE EQU	*		
1584	01	00220	49F00000 X	OR,15	X20	SET INTERACTIVE BIT	
1585	01	00221	55F80000 X	STH,15	UH:FLG,4	IN FLAGS	
1586	01	00222	680001CB	B	T:CHSE	AND CHANGE STATE	
1588				* BLOCK FOR I/O IN PROGRESS OR MF TOO HIGH			
1590	01	00223	22100000 A	STI0MF LI,R1	0	ZERO DCB TO FORCE BLOCK	
1591		01 00224		STIIP EQU	*	I/O IN PROGRESS	
1592	01	00224	72280000 X	LB,2	UB:MF,4		
1593	01	00225	68300369	BEZ	GRANT	I/O IS ALLREADY DONE	
1594	01	00226	2280003C	LI,R11	T:SE0	CHANGE RETURN TO AVOID TISS	
1595	01	00227	20600010 A	AI,6	SI0W=E:IIP	FORM PROPER STATE NUMBER	
1596	01	00228	32200006 A	LW,2	6	MOVE TO PROPER REGISTER	
1597	01	00229	20100000 A	AI,1	0	CHECK FOR NEWQ (DCBADDR =0)	
1598	01	0022A	683001B0	BEZ	RCE4	NEWQ	
1599		00000007		FCN EQU	7		
1600	01	0022B	32820007 A	LW,8	FCN,1	GET FUNCTION COUNT WORD	
1601	01	0022C	31800000 X	CW,8	YFF	TEST FOR ZERO FUNCTION COUNT	
1602	01	0022D	68400369	BAZ	GRANT	YES, LET HIM GO	
1603	01	0022E	49800000 X	OR,8	Y8	SET MARKER BIT IN FCN WORD OF DCB	
1604	01	0022F	35820007 A	STW,8	FCN,1	AND REPLACE IT	
1605	01	00230	680001B0	B	RCE4	PARK HIM	
1607				* I/O COMPLETE REPORT HANDLING			
1609		01 00231		STI0C EQU	*	I/O COMPLETE	
1610	01	00231	73F80000 X	MTB,-1	UB:MF,4	DECREMENT MASTER FUNCTION COUNT	

SPECIAL TRANSITIONS

Line	Op	Code	Address	Label	Op	Comment
1611	01	00232	31C00566		CW,12	*(1**SI0W)+(1**SI0MF)
1612	01	00233	68400250		BAZ	ENBISR4 NOT WAITING, GET OUT
1613	01	00234	72080000 X		LB,R0	UBIMF,R4 CHECK FOR ALL I/O COMPLETE
1614	01	00235	68300247		BEZ	I0C0M3 YES
1615	01	00236	21300011 A		CI,3	SI0MF CHECK FOR MASTER FUNCTION COUNT BLOCK
1616	01	00237	68300241		BE	I0C0M2 YES, WITH I/O GOING
1617	01	00238	40100000 X	I0C0M1	AND,R1	M21 SCRUB DCB PHYSICAL ADDRESS
1618	01	00239	6830021E		BEZ	STI0CC NO DCB, NEWQ
1619	01	0023A	32220007 A		LW,R2	FCN,R1 GET FUNCTION COUNT WORD
1620	01	0023B	6810024B		BGEZ	I0C0M4 NOT WAITING ON THIS ONE
1621	01	0023C	31200000 X		CW,R2	Y7F CHECK FOR ZERO FCN
1622	01	0023D	6940024B		BANZ	I0C0M4 NO, DONT UNBLOCK YET
1623	01	0023E	40200000 X	I0C0M5	AND,R2	M24 SCRUB FLAG OFF
1624	01	0023F	35220007 A		STW,R2	FCN,R1 REPLACE FCN WORD WITH FLAG OFF
1625	01	00240	6800021E		B	STI0CC AND UNBLOCK
1626	01	00241	32200000 X	I0C0M2	LW,2	SLI0IMF GET ONLINE UNBLOCK
1627	01	00242	21F00100 A		CI,15	BAT CHECK FOR BATCH
1628	01	00243	68400245		BAZ	*+2 NO
1629	01	00244	32200000 X		LW,2	SLI0IMF YES, USE BATCH LIMIT
1630	01	00245	71280000 X		CB,2	UBIMF,4 SHOULD WE RESTART HIM
1631	01	00246	69100250		BL	ENBISR4 NO
1632	01	00247	33100000 X	I0C0M3	MTW,+1	S:SEVF SWAP SET CHANGED
1633	01	00248	21300011 A		CI,R3	SI0MF BLOCKED FOR MASTER FUNCTION COUNT
1634	01	00249	69300238		BNE	I0C0M1 NO
1635	01	0024A	6800021E		B	STI0CC TURN HIM LOOSE
1636	01	0024B	72080000 X	I0C0M4	LB,R0	UBIMF,R4 GET MF AGAIN
1637	01	0024C	69300250		BNE	ENBISR4 STILL GOT I/O GOING
1638	01	0024D	6800023E		B	I0C0M5 AND REPLACE IN DCB
1639	01	0024E	79280000 X	CHS1	STB,2	UB:US,4 REMEMBER NEW STATE
1640	01	0024F	33100000 X		MTW,+1	S:SEVF SET EVENT FLAG COUNTER
1641	01	00250		STN0P	RES	0
1642	01	00250	60000027 A	ENBISR4	ENABLE	
1643	01	00251		BISR4	RES	0
1644	01	00251	E000000B A		B	*11

SPECIAL TRANSITIONS
* ABORT OR OFF EVENT HANDLER

1648	01	00252	21F00100	A	STABRT	CI,15	BAT	CHECK FOR BATCH
1649	01	00253	69400261			BANZ	SETDL	SET DB LIST
1650	01	00254	22300000	N		LI,3	MAXG	CHECK FOR GHOST
1651	01	00255	6U000027	A		ENABLE		ALLOW INTERRUPTS ** ENABLE **
1652	01	00256	71460000	X		CB,4	SBIGJOBUN,3	IS HIS USER NUMBER A GHOST
1653	01	00257	6830025F			BE	STABRT1	YES, NO COC LINE
1654	01	00258	64300256			BDR,3	*=2	CONTINUE
1655	01	00259	227FFFFF	N		LI,7	LN8L=1	MUST BE ONLINE, FIND HIS LINE #
1656	01	0025A	714E0000	X		CB,4	LB:UN,7	HIS USER NUMBER
1657	01	0025B	68300274			BE	COCABRT	YES
1658	01	0025C	6470025A			BDR,7	*=2	NO, KEEP SEARCHING
1659	01	0025D	71400000	X		CB,4	LB:UN	MIGHT BE LINE ZERO
1660	01	0025E	68300274			BE	COCABRT	YES
1661	01	0025F	6U000037	A	STABRT1	DISABLEF		BLOCK INTERRUPTS ** DISABLE**
1662	01	00260	72380000	X		LB,3	UB:US,4	GET USERS STATE
1663	01	00261	31C00567		SETDL	CW,12	=(1**SQR)+(1**SQR0)	CHECK FOR SQR OR SQR0
1664	01	00262	68400269			BAZ	SETDL1	NEITHER
1665	01	00263	32180000	X		LW,1	UIMISC,4	GET RESOURCE
1666	01	00264	72100001	A		LB,1	1	INDEX
1667	01	00265	51E20000	05		CH,14	SHIRFLG,1	SHOULD WE CHANGE STATE
1668	01	00266	68400269			BAZ	SETDL1	NO
1669	01	00267	6A0002DE			BAL,0	T:UQR	UNQ FROM RESOURCE CHAIN
1670	01	00268	49600000	X		OR,6	Y8	SET STATE CHANGE FLAG
1671	01	00269			SETDL1	RES	0	
1672	01	00269	51E80000	X		CH,14	UH:DL,4	IS THIS FLAG ALREADY SET
1673	01	0026A	69400250			BANZ	ENBISR4	YES, GET OUT
1674	01	0026B	50E80000	X		AM,14	UH:DL,4	MERGE IN NEW FLAG
1675	01	0026C	55E80000	X		STH,14	UHIDL,4	AND PUT AWAY
1676	01	0026D	6960021F			BIR,6	STIRC	TEST FLAG FOR STATE CHANGE
1677	01	0026E	68000250			B	ENBISR4	NO STATE CHANGE

SPECIAL TRANSITIONS

Line	Code	Address	Mode	Label	Op1	Op2	Description
1679				*			COMMON PROCESSING FOR E:OFF, E:ERR, E:CBK, E:CEC
1680				*			ONLY E:OFF REQUIRES SPECIAL ADDITIONAL ACTION
1682	01	0026F	49600000 X	STBEEAC	BR,6	Y8	SET STATE CHANGE FLAG
1683	01	00270	49600000 X	STBEEA	BR,6	X1	SELECT RIGHT HALFWORD
1684	01	00271	52EC0008 N		LH,14	X1+(12=E:CBK/2),6	PICK PROPER FLAG
1685				*			E:CBK => X1000
1686				*			E:CEC => X2000
1687				*			E:ERR => X4000
1688				*			E:OFF => X8000 (NEGATIVE HALFWORD)
1689				*			
1690	01	00272	69100252		BLZ	STABRT	SPECIAL ABORT PROCESSING
1691	01	00273	68000261		B	SETDL	SET DBLIST
1692	01	00274	09B00000 N	COCABRT	PUSH	11	SAVE RETURN
1693	01	00275	6AB0025F		BAL,11	STABRT1	SET FLAGS AND MAYBE CHANGE STATE
1694	01	00276	08B00000 N		PULL	11	POP RETURN
1695	01	00277	68000000 X		B	COCOFF	AND MARK LINE OFF (7=LINE #)
1696				*			
1697				*			ASSOCIATE PROCESSOR
1698				*			
1699				*			QUEUES USER TO HEAD OF SPECIAL COMPUTE QUEUE
1700				*			
1701	01	00278	49400000 X	STASP	BR,4	Y8	SET HEAD OF Q FLAG
1702	01	00279	6800021D		B	STSC	AND MAKE HIM SPECIAL COMPUTE
1703	01	0027A	21F04000 A	STCRD	CI,15	X140001	TEST FOR UNBLOCK BEFORE BLOCK
1704	01	0027B	69400282		BANZ	QF0RA2	YES
1705	01	0027C	22200016 A		LI,2	STI	STATE TERMINAL INPUTTING
1706	01	0027D	49400000 X		BR,R4	Y8	SET HEAD OF QUEUE FLAG
1707	01	0027E	680001B0		B	RCE4	GO CHANGE STATE
1708	01	0027F		STQA	EQU	\$	
1709	01	0027F	52FB0000 X		LH,15	UH:FLG,4	
1710	01	00280	21F04000 A		CI,15	X140001	
1711	01	00281	68400285		BAZ	QF0RA1	
1712	01	00282	2UFFC000 A	QF0RA2	AI,15	=X140001	TURN OFF FLAG
1713	01	00283	55F80000 X		STH,15	UH:FLG,4	
1714	01	00284	68000369		B	T:PULLE	
1715	01	00285	22200013 A	QF0RA1	LI,2	SGA	

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SPECIAL TRANSITIONS

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1716	01	00286	680001B0		B	RCE4		
1717	01	00287	21300013	A	STUGA	CI,3	SQA	IS HE QUEUED FOR ACCES
1718	01	00288	6830021D			BE	STSC	YES SPECIAL COMPUTE
1719	01	00289			STIRCU	RES	0	
1720	01	00289	49F00000	X		BR,15	X4000	
1721	01	0028A	55F80000	X		STH,R15	UHIFLG,R4	SAVE NEW FLAGS
1722	01	0028B	68000250			B	ENBISR4	ENABLE AND EXIT
1723					*			
1724					*			KICKOUT USER SPECIAL TRANSITION
1725					*			
1726	01	0028C	72280000	X	STKBT	LB,2	UBIUS,4	FORM NEW STATE
1727	01	0028D	20200001	A		AI,2	ST0B0-ST0B	FOR TERMINAL I/O OUT OF CORE
1728	01	0028E	4BF00568			AND,15	= (RTR+JIC)	RESET JIC AND RTR
1729	01	0028F	55F80000	X		STH,R15	UHIFLG,R4	SAVE NEW FLAGS
1730	01	00290	680001B0			B	RCE4	AND CHANGE STATE
1731	01	00291	4BF00568		STK0	AND,15	= (RTR+JIC)	RESET JIC AND RTR
1732	01	00292	55F80000	X		STH,15	UHIFLG,4	SAVE FLAGS
1733	01	00293	2130000C	A		CI,3	SEXU	CHECK FOR EXECUTABLE
1734	01	00294	69200250			B0	ENBISR4	NO, SKIP STATE CHANGE
1735	01	00295	72280000	X		LB,2	UBIPRI0,4	GET PRIORITY
1736	01	00296	680001DA			B	CHSE1	WADE INTO STATE CHANGE

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1739

SPECIAL TRANSITIONS
* UNQUEUE FOR ALLYCAT... RESIDENT PORTION OF ALLYCAT

96

1741		01 00297		STUQFAC	EQU	\$	
1742	01	00297	22100004 A		LI,R1	4	INDEX FOR BUFFERS
1743	01	00298	201FFFFFF A	UNQNEXT	AI,R1	=1	DECREMENT INDEX
1744	01	00299	691002CD		BLZ	UNGXIT	EXIT IF NO MORE
1745	01	0029A	60000037 A		DISABLF		
1746	01	0029B	52220000 X		LH,R2	BUFLAGS,R1	GET FLAGS
1747	01	0029C	25200010 A		SLS,R2	16	POSITION
1748	01	0029D	70200002 A		LC	R2	GET MSG
1749	01	0029E	694002A1		BCS,4	UNQEMPTY	JUST EMPTIED
1750	01	0029F	692002A4		BCS,2	UNQFILL	JUST FILLED
1751	01	002A0	680002A6		B	UNQSETFL	DO ARITHMETIC ON EMPTH HGP
1752	01	002A1	52220000 X	UNQEMPTY	LH,R2	BOTTOM,R1	UPDATE THE POINTERS
1753	01	002A2	55220000 X		STH,R2	TEMPBOT,R1	
1754	01	002A3	680002A6		B	UNQSETFL	RESET THE FLAGS
1756	01	002A4	52220000 X	UNQFILL	LH,R2	TEMPBOT,R1	UPDATE THE POINTERS
1757	01	002A5	55220000 X		STH,R2	BOTTOM,R1	
1758	01	002A6	52220000 X	UNQSETFL	LH,R2	BUFLAGS,R1	RESET THE FLAGS
1759	01	002A7	482002B5		AND,R2	X9FFF	
1760	01	002A8	55220000 X		STH,R2	BUFLAGS,R1	
1762	01	002A9	52220000 X		LH,R2	WORDCNT,R1	ADJUST WORD COUNT
1763	01	002AA	50220000 X		AH,R2	ADJSTCNT,R1	TO NEW VALUE
1764	01	002AB	55220000 X		STH,R2	WORDCNT,R1	
1765	01	002AC	202FFFFFF A		AI,R2	=1	DECREMENT COUNT
1766	01	002AD	31220000 X		CW,R2	BUFMASK,R1	COMPARE TO MAX POSSIBLE
1767	01	002AE	682002B1		BLE	UNQNEXT1	OKAY
1768	01	002AF	0F000000 X		SCREECH	X'88'	BUMMER
		01	002B0	00880000 A			
1769	01	002B1	22200000 A	UNQNEXT1	LI,R2	0	NOW ZAP
1770	01	002B2	55220000 X		STH,R2	ADJSTCNT,R1	ADJUSTED COUNTER
1771	01	002B3	60000027 A		ENABLE		LET EM RIP
1773	01	002B4	68000298		B	UNQNEXT	

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S P E C I A L T R A N S I T I O N S

1775 01 00285 00009FFE A X9FFF

DATA X'9FFE'

1776

REF BOTTOM,TEMPBOT,BUFLAGS

1777

REF WORDCNT,ADJUSTCNT

1779 FR

UNQXIT

EGU

T:REL1

```

1781
1782
1783
1784
1785
1786
1787
1788
1789 01 002B6 206FFFE2 A T:RES AI,6 *E:REL TAKE OFF BASE
1790 01 002B7 2560027F A SCS,6 =1 HALVE AND POSITION FLAG
1791 01 002B8 20600000 A AI,6 0 TEST FOR RELEASE
1792 01 002B9 691002C5 BLZ T:REL YES
1793 01 002BA 722C0000 04 LB,2 SB:RBLK,6 GET BLOCK TRANSFER INDEX
1794 01 002BB 693402E5 BNEZ T:BLKV,2 GO TO IT
1795 01 002BC 722C0000 X LB,2 SB:RQ,6 GET HEAD OF RESOURCE Q
1796 01 002BD 75600002 A STB,6 2 SAVE RESOURCE INDEX
1797 01 002BE 35280000 X STW,2 U:MISC,4 SET FLINK
1798 01 002BF 75440000 X STB,R4 UB:PRI0,R2 AND BLINK TO CURRENT HEAD
1799 01 002C0 22200000 A LI,2 0 ZAP
1800 01 002C1 75280000 X STB,2 UB:PRI0,4 BLINK
1801 01 002C2 754C0000 X STB,4 SB:RQ,6 SET NEW HEAD
1802 01 002C3 22200014 A LI,2 SQR NEW STATE
1803 01 002C4 680001B0 B RCE4
1804
1805
1806 01 002C5 522C0000 05 T:REL LH,2 SH:RFLG,6 GET FLAGS AND INDEX
1807 01 002C6 21200100 A CI,2 SPECIFIC SPECIFIED USER ONLY
1808 01 002C7 694002DA BANZ RELB YES
1809 01 002C8 21200400 A CI,2 NULL CHECK FOR ACTION ON NULL Q
1810 01 002C9 724C0000 X LB,4 SB:RQ,6 GET HEAD OF SUBQUEUE
1811 01 002CA 68700250 BCR,7 ENBISR4 NONE IN Q AND NO NULL FLAG
1812 01 002CB 48200000 X RELA AND,2 M8 SCRUB TO INDEX
1813 01 002CC 693402E5 BNE T:RELV,2 GO TO SPECIAL ROUTINE
1814 01 002CD 60000037 A T:REL1 DISABLE MERGE POINT FOR SPECIAL UNBLOCK ROUTI
1815 01 002CE 20400000 A AI,4 0 CHECK FOR NULL Q
1816 01 002CF 68300250 BEZ ENBISR4 YES, GET OUT
1817 01 002D0 6A0002DE BAL,0 T:UGR UNQUEUE FOR RESOURCE
    
```

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1818	01	002D1	09800000	N
1819	01	002D2	72380000	X
1820	01	002D3	6AB0021D	
1821	01	002D4	08800000	N
1822	01	002D5	522C0000	05
1823	01	002D6	21200200	A
1824	01	002D7	68400250	
1825	01	002D8	6U000037	A
1826	01	002D9	680002C5	
1827	01	002DA	31C00567	
1828	01	002DB	694002CB	
1829	01	002DC	22400000	A
1830	01	002DD	680002CB	

REL B

RESOURCE BLOCK/UNBLOCK

PUSH	11	SAVE RETURN
LB,3	UB;US,4	GET CURRENT STATE
BAL,11	STSC	SPECIAL COMPUTE
PULL	11	RESTORE RETURN
LH,2	SH;RFLG,6	GET FLAGS
CI,2	FLUSH	FLUSH ALL>
BAZ	ENBISR4	NO
DISABLEF		***** DISABLE *****
B	T:REL	CONTINUE FLUSHING
CW,R12	=(1**SQR)+(1**SQR0)	CHECK THAT HE IS SQR OR SQR0
BANZ	RELA	YES, OK
LI,R4	0	OTHER WISE ZAP USER NO
B	RELA	TO SKIP UNG

```

1832 *
1833 *
1834 * UNQUEUEF FOR RESOURCE
1835 *
1836 * CALLED DISABLED
1837 *
1838 * R0 = LINK
1839 * R1 = TEMP
1840 * R4 = USER NUMBER
1841 * R5 = TEMP
1842 * R6 = FORCED TO RESOURCE INDEX FOR USER(R4)
1843 *
1844 * UBIPRI0 IS USED AS A BACK LINK
1845 * BYTE(3) OF UIMISC IS FORWARD LINK
1846 * BYTE(0) OF UIMISC IS RESOURCE INDEX
1847 * SB:RQ(R6) CONTAINS HEAD OF SUB-QUEUE
1848 *
1849 01 002DE 32580000 X TIUQR LW,5 U:MISC,4 GET FORWARD LINK
1850 01 002DF 72600005 A LB,6 5 RESOURCE INDEX
1851 01 002E0 72180000 X LB,1 UBIPRI0,4 GET BLINK
1852 01 002E1 693002E3 BNEZ 0+2
1853 01 002E2 795C0000 X STB,5 SB:RQ,6 SET NEW HEAD
1854 01 002E3 751A0000 X STB,1 UBIPRI0,5 CROSS LINK REMAINING
1855 01 002E4 35520000 X STW,5 U:MISC,1 ENTRIES
1856 01 002E5 E8000000 A B *0 RETURN
    
```

```

1858
1859
1860
1861          01 002E5      *
                            *
                            *   SPECIAL ACTION VECTOR FOR RESOURCE BLOCK
                            *
1862          T:BLKV      EQU      *-1          BASE
1863          *
1864          *
1865          *
1866          *
1867          *
1868          *   SPECIAL ACTION VECTOR FOR RESOURCE UNBLOCK
1869          *
1870          01 002E5      T:RELV      EQU      *-1          BASE
1871          01 002E6      68000297      UGFAC      B          STUGFAC          UNQUEUE FOR ALLOCAT
1872          01 002E7      0PNUNBLOCK RES      0
1873          01 002E7      32F00000 X      LW,R15      0PNCLSUS          DID ANY GET THERE BEFORE US
1874          01 002E8      69300250      BNEZ          ENBISR4          YES GET OUT
1875          01 002E9      52F80000 X      LH,R15      UH:FLG,R4          GET HIS FLAGS
1876          01 002EA      49F00000 X      OR,R15      X8          SET 0PNCLSUSR FLAG
1877          01 002EB      55F80000 X      STH,R15     UH:FLG,R4          AND SAVE NEW FLAGS
1878          01 002EC      35400000 X      STW,R4      0PNCLSUS          CLEAR, MAKE HIM 0PNCLS USER
1879          01 002ED      680002CD      B          T:REL1          AND UNBLOCK HIM
1880          *
1881          *

```


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1920	01	00300	22200001	N
1921	01	00301	32F00000	X
1922	01	00302	31F5FFFF	N
1923	01	00303	69100306	
1924	01	00304	64200302	
1925	01	00305	68000250	
1926	01	00306	33100000	X
1927	01	00307	754E0000	X
1928	01	00308	32F00000	X
1929				

L O G O N		N E W		U S E R S	
LI,2		LSWAP,1			
LW,15		S;BUAIS			
CW,15		M:FREE*GRAN=1,2			
BL		*+3			
BDR,2		*-2			
B		LOGN0			
MTW,1		S;BUIS			
STB,4		LB:UN,7			
LW,15		SL;0PRI0			
DEF		ADD1			

GET DEFAULT ONLINE PRI0

103

1931
1932
1933
1934
1935
1936
1937
1938
1939
1940
1941
1942
1943
1944
1945
1946
1947
1948
1949
1950
1951
1952
1953
1954
1955

1957 01 00309
1958 01 00309 33100000 X
1959 01 0030A 75F80000 X
1960
1961 01 0030B 09800000 N
1962 01 0030C 60000037 A
1963 01 0030D 32200000 X
1964 01 0030E 32100000 X
1965 01 0030F 32F3FFFF N
1966 01 00310
1967 01 00310 31F3FFFF N

ADD A NEW USER

```
*****
*
* ADD A USER TO THE SYSTEM
*
* CALLED BY MBS AND TIGJOBSTRY TO
* START BATCH AND GHOST USERS.
* IN-LINE PIECE OF LOGON WHICH STARTS
* ON-LINE USERS.
*
* R11 = LINK
* R4 = USER NUMBER (IN)
*
* THE NEW USER WILL BE PLACED IN AN
* EXECUTABLE STATE IF A DISC PAGE IS
* AVAILABLE FOR HIS JIT. IF NOT, HE
* WILL BE PUT IN SQR AND QUEUED FOR
* A DISC PAGE. WHEN A DISC PAGE IS
* AVAILABLE AND HE IS SCHEDULED FOR
* INSWAP, THE SWAPPER WILL RE-ENTER
* ADD1 AT GETJIT WHICH WILL AGAIN TRY
* TO GET A SPOT FOR HIS JIT BEFORE HIS
* INITIAL INSWAP.
*
*****
```

```
ADD1 EGU *
      MTW,1 S;CUI5 INCREMENT NO. OF USERS IN SYSTEM
      STB,R15 UB;PRI0B,R4 PUT AWAY USER PRIORITY
* GET GRAN FOR JIT AFTER DECIDING WHICH RAD AND GRAN PGS ON THAT RAD
GETJIT PUSH 11
      DISABLE
      LW,R2 NSWAP NO. OF SWAPPERS IN SYSTEM
      LW,R1 NSWAP
      LW,15 M;FREE#GRAN=1,1 GET # OF GRAN AVAIL ON 1ST SWAP RAD
GJG1 EGU *
      CW,15 M;FREE#GRAN=1,1 IS # IN HAND GREATER THAN BUSH
```


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1968 01 00311 68100314
 1969 01 00312 32F3FFFF N
 1970 01 00313 32200001 A
 1971 01 00314
 1972 01 00314 64100310
 1973 01 00315 202FFFFFF A
 1974
 1975 01 00316 75280000 X
 1976 01 00317 32140000 X
 1977 01 00318 6AB00000 X
 1978 01 00319 6910032E
 1979 01 0031A 72140000 X
 1980 01 0031B 66140000 X
 1981 01 0031C 2220021F
 1982 01 0031D
 1983 01 0031D 08B00000 N
 1984 01 0031E 55F80000 X
 1985 01 0031F 52F80000 X
 1986 01 00320 49F00569
 1987 01 00321 55F80000 X
 1988 01 00322 22300018 A
 1989 01 00323 55380000 X
 1990 01 00324 22300001 N
 1991 01 00325 75380000 X
 1992 01 00326 72380000 X
 1993 01 00327 22100000 A
 1994 01 00328 55180000 X
 1995 01 00329 7300000A A
 1996 01 0032A 68340000 A
 1997 01 0032B 22100000 N
 1998 01 0032C 68340000 A
 1999 01 0032D 68020000 A
 2000 01 0032E
 2001 01 0032E 22600026 A
 2002 01 0032F 22200286
 2003 01 00330 22FFFFFF A
 2004 01 00331 6800031D

ADD A NEW USER
 GJG2
 BGE
 LW,15
 LW,2
 EQU
 BDR,1
 AI,2
 * 2 POINTS TO THE MOST AVAILABLE RAD
 STB,2
 LW,1
 BAL,11
 BCS,1
 LB,1
 AWM,1
 LI,2
 GJG3
 RES
 PULL
 STH,15
 LH,R15
 BR,R15
 STH,R15
 LI,R3
 STH,R3
 LI,R3
 STB,3
 LB,3
 LI,1
 STH,1
 MTB,0
 BEZ
 LI,R1
 BEZ
 B
 RES
 LI,6
 LI,2
 LI,15
 B
 GJG4

SURE IS, KEEP IT AND TRY NEXT
 NAA, HEAD FOR THE BUSHES
 AND POINT TO NEW ONE
 TRY NEXT
 GET NXT GRAN PGS
 ALLCATE USER TO RAD
 NEXT GRAN PGS
 NONE AVAEIL
 INCR VALUE TO SPACE ARBUND THIS RAD
 UPDATA FOR NXT
 MAKE HIM INTERACTIVELY EXECUTABLE
 RESTORE RETURN
 ESTABLISH USERS JIT DISC ADDR.
 GET USER FLAGS
 SET TEL IN CONTROL AND PPSWAP
 STORE FLAGS
 SET SQUAN AND JUST SWAPPED BIT
 IN SECOND FLAGS
 INITIAL PAGE COUNT
 USER NEEDS 1 PAGE FOR HIS JIT
 GET CURRENT STATE
 MAKE SURE DOLIST EMPTY.
 WAS RESOURCE PASSED
 NO = EXIT
 DOES RAS HANDLER EXIST
 NO = IGNORE THIS
 DISPATCH RAS HANDLER = RETURN VIA R2
 RESOURCE INDEX
 SET TO BLOCK FOR DISC PAGE
 SET FLAG FOR SWAPPER
 MERGE WITH COMMON

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2005 01 00250

2006
2007
2008
2009
2010

LOGNO
*
*
*
*

EGU

SREF

ADD A NEW USER
ENBISR4

RESCNT

EXISTS ONLY IN 560 SYSTEMS

2013				DEF
2014	01	00332	T:UTSXTS	EGU
2015			*	
2016			*	
2017			*	
2018			*	
2019			*	
2020			*	
2021			*	
2022			*	
2023			*	
2024			*	
2025			*	
2026			*	
2027			*	
2028			*	
2029			*	
2030			*	
2031			*	
2032			*	
2033	01	00332	32300001	A LW,3
2034	01	00333	6A70035B	BAL,7
2035	01	00334	92C00001	A LD,12
2036	01	00335	3230000C	A LW,3
2037	01	00336	20300001	A AI,3
2038	01	00337	6A70035C	BAL,7
2039	01	00338	21C00001	A CI,12
2040	01	00339	6840033D	BAZ
2041	01	0033A	22300015	A LI,3
2042	01	0033B	225FFFFFF	A LI,5
2043	01	0033C	6800033F	B
2044	01	0033D	22300014	A LI,3
2045	01	0033E	22500000	A LI,5
2046	01	0033F	3290056A	LW,9
2047	01	00340	4A80000D	A LS,8
2048	01	00341	49D0056A	BR,13
2049	01	00342	1330000C	A MSP,3

ADD A NEW USER

```

T:UTSXTS
*
COPY ENVIRONMENT FROM TSTACK TO USER STACK.
MAPPED. INTERRUPT INHIBITS UNCHANGED.
R1 = ADDRESS OF USER STACK POINTER DOUBLEWORD.
R0 CONTENTS WILL BE ON TOP OF USER STACK AFTER COPY.
R10/R11 ARE CONTENTS/MASK TO REPLACE PSW0 IN TSTACK
AFTER COPY.
R4 = LINK. RETURNS 1,R4 IF COPY IS SUCCESSFUL.
R0,R1,R4,R6 PRESERVED.
R2 = ADDRESS OF PSW0 IN USERSTACK.
R3 = MID-ADDRESS OF PSD IN TSTACK.
R5 = JITCB.
R0 IN TSTACK = JITCB.
R1 IN TSTACK => PSW0 IN USERSTACK.
PSW0 IN TSTACK MODIF. PER R10/R11.
RETURNS 0,R4 IF USER STACK IS BAD.
R0,R1,R4,R6 PRESERVED.
R10,R11,R14 PRESERVED.

CHKPRBT-1 CHECK SPD IN 00 SPACE.
*1 12/13 ARE SPD.

CHKPRBT CHECK STACK BOTTOM IN 00 SPACE.
*+4 IF STACKBOTTOM IS EVEN,
21 PUSH 21 WORDS
-1 STARTING WITH A =1.
*+3 IF STACKBOTTOM IS ODD,
20 PUSH 20 WORDS
0 STARTING WITH A 0.

L(X'80008000') REMEMBER SPD TRAP BITS.
13
L(X'80008000')
12 MODIFY SPD IN 12/13.
    
```

```

2050 01 00343 69A80000 A
2051 01 00344 47800000 A
2052 01 00345 3230000C A
2053 01 00346 6A70035C
2054 01 00347 95C00001 A
2055 01 00348 3220000C A
2056 01 00349 202FFFEE A
2057 01 0034A 32300000 X
2058 01 0034B 203FFFEE A
2059 01 0034C 92E00003 A
2060 01 0034D 95E00002 A
2061 01 0034E 47A0000E A
2062 01 0034F 95E00003 A
2063 01 00350 3555FFFF A
2064 01 00351 02200080 A
2065 01 00352 2A860002 A
2066 01 00353 20840002 A
2067 01 00354 2A86000A A
2068 01 00355 02200090 A
2069 01 00356 2084000A A
2070 01 00357 32500000 X
2071 01 00358 35560002 A
2072 01 00359 35260003 A
2073 01 0035A 60080001 A
2074
2075
2076
2077 01 0035B 22FFFFFF A
2078 01 0035C
2079
2080
2081
2082 01 0035C 40300000 X
2083 01 0035D 3130000F A
2084 01 0035E 603E0000 A
2085
2086 01 0035F 21300000 N
    
```

```

P U L L E X I T
BCS,10 0,4
STS,8 13
LW,3 12
BAL,7 CHKPR0T
STD,12 *1
LW,2 12
AI,2 =18
LW,3 TSTACK
AI,3 =17
LD,14 *3
STD,14 *2
STS,10 14
STD,14 *3
STW,5 =1,2
LCI 8
LM,8 2,3
STM,8 2,2
LM,8 10,3
LCI 9
STM,8 10,2
LW,5 J:TCB
STW,5 2,3
STW,2 3,3
B 1,4
*
*
DEF CHKPR0T
LI,15 =1
EQU $
CHKPR0T $
*
*
REF X1FE00
AND,3 X1FE00
CW,3 15
BE 0,7
REF J0VVPA
CI,3 J0VVPA
    
```

```

-----> EVIL STACK...
RESTORE SPD TRAP BITS.
CHECK STACK TOP IN 00 SPACE.
STORE UPDATED SPD.
2 => PLACE FOR PSD.
3 => PSD IN TSTACK.
STORE PSD IN OTHER STACK.
FIX UP PSWO
IN TSTACK.
STORE =1 OR 0 IN OTHER STACK.
STORE REGS 0-7 IN OTHER STACK.
STORE REGS 8-15 IN OTHER STACK.
STORE TCBADDR IN R0 IN TSTACK.
STORE => PSD IN R1 IN TSTACK.
-----> OKAY RETURN...
GARBAGE PAGE # FOR FIRST CALL.
CHECK STOREABILITY IN *R3. USES R2,R3,R15.
RETURN 0,R7 IF OKAY, 0,R4 IF BAD.
CONVERT ARG TO PAGE ADDRESS.
SAME PAGE...
--> YES: MUST STILL BE OKAY.
OUTSIDE THE MONITOR ROOT...
    
```

H01 13:35 SEP 08, '75
 2087 01 00360 68100362
 2088 01 00361 68080000 A
 2089 01 00362 32F00C03 A
 2090 01 00363 25200115 A
 2091 01 00364 25300202 A
 2092
 2093 01 00365 72240000 X
 2094 01 00366 7126056B
 2095 01 00367 684E0000 A
 2096 01 00368 68080000 A

BGE *+2
 B 0,4
 LW,15 3
 SLD,2 21
 SCS,3 2
 REF J:JAC
 LB,2 J:JAC,2
 CB,2 L(X'CO300C03'),3
 BAZ 0,7
 B 0,4

P U L L E X I T

***> YES;
 ***> NO, MUST BE BAD.
 REMEMBER PAGE ADDRESS.
 R2= PAGE#/4.
 R3= PAGE# MOD 4.
 GET BYTE OF ACCESS CODES.
 COMPARE THE PROPER TWO BITS.
 ***> STOREABLE, RETURN OKAY.
 ***> NOT STOREABLE, RETURN BAD.

2098
 2099 01 00369
 2100 01 00369 60000037 A
 2101 01 0036A 222FFFD A
 01 0036B 13200000 X
 2102 01 0036C 68100371
 2103 01 0036D 32200000 X
 2104 01 0036E 68300371
 2105 01 0036F 22200000 N
 2106 01 00370 55200001 N
 2107 01 00371
 2108 01 00369
 2109 01 00371 22200002 A
 2110 01 00372 30200000 X
 2111 01 00373 35200001 N
 2112 01 00374 02200000 A
 2113 01 00375 2A040002 A
 2114 01 00376 8E800001 N

P U L L E X I T
 T:PULLE DEF T:PULLE
 EQU *
 T:PULLE DISABLF
 BUMP *19,2
 BCR,1 T:PULLE1
 LW,2 J:JIT
 BEZ T:PULLE1
 LI,2 JTSTACKSZ
 STW,2 TSTACK+1
 T:PULLE1 EQU *
 GRANT EQU T:PULLE
 LI,2 2
 AW,2 TSTACK
 STW,2 PULLE1+1
 LCI 0
 LM,0 2,2
 LPSD,8 *PULLE1+1

B/STACK NOT EMPTY
 L/WD 0 BF JIT
 BEZ; MONITOR JIT; DON'T TOUCH TSTACK
 L/USER JIT'S TSTACK SIZE
 PURGE BSTACK; RESET SPACE COUNT

P U L L E X I T

```

2116
2117
2118
2119
2120
2121          01 00377
2122 01 00377 09900000 N
2123 01 00378 32900000 X
2124 01 00379 31900000 X
2125 01 0037A 68400382
2126 01 0037B 08900000 N
2127 01 0037C 0EB00004
2128 01 0037D 02200060 A
          01 0037E 05D00000 N
          01 0037F 12000000 X
          01 00380 6A200000 X
2129 01 00381 68000045
2130 01 00382 08900000 N
2131 01 00383 0EB00000 X

*
*   CLOCK4 INTERRUPT ROUTINE
*
REF      CLK4PSD
DEF      CLK4
CLK4     EQU      *
        PUSH     9
        LW,9     CLK4PSD
        CW,9     Y008
        BAZ      CK3EX
        PULL     9
        LPSD,11  C3MP          CLEAR INT,PUSHE AND SSE1
        T:PUSHE  CLK4PSD

CK3UM1

        B        SSE1
CK3EX    PULL     9
        LPSD,11  CLK4PSD          CLEAR INT AND RETURN
    
```

2134
2135
2136

* SWAP SCHEDULER *

2138
2139 01 00384
2140 01 00384 22000001 A
2141 01 00385 46000000 X
2142 01 00386 69300251
2143 01 00387 35000000 X
2144 01 00388
2145 01 00388 09800000 N
2146 01 00389
2147 01 00389 12E00000 X
2148 01 0038A 02200030 A
2149 01 0038B 24E00000 X
2150 01 0038C 24E00000 X
2151 01 0038D 24E00000 X
2152
2153
2154
2155 01 0038E 22F00001 A
2156 01 0038F 12200000 X
2157 01 00390 68300397
2158 01 00391 49200000 X
2159 01 00392 24200110 A
2160 01 00393 25200207 A
2161 01 00394 44200000 X
2162 01 00395 48200000 X
2163 01 00396 68000398
2164 01 00397 22200008 A
2165 01 00398 72440000 X
2166 01 00399 6830039E
2167 01 0039A 51F80000 X

T:SS DEF TSS1
EQU *
LI,0 1
XW,0 S;SIP SWAPPER BUSY
BNE BISR4 YUP AND NOT RE-ENTRANT
STW,0 DID#10
TSS1 EQU *
PUSH 11
TSS2 EQU *
LD,14 DOUBLEZERO GET MORE ZERES
LCI 3 SET TO STORE 3 WORDS
STM,14 S;PCT CLEAR S;PCT,S;FPPH,S;FPPT
STM,14 S;FPPC CLEAR S;FPPC,S;AJP,SB;0SN
STM,R14 S;0SS ZAP COUNT OF PROCESSORS
*
* PICK A USER TO SWAP IN.
*
LI,15 RTR
LD,2 SB;HQ GET PRESENCE INDICATORS FOR FIRST 7
BEZ PIKF1 NONE, SKIP FIRST SEVEN
BR,2 Y7D SET EXPONENT FOR FLOATING SHIFT
SFL,2 16 DO NORMALIZE TO FIND FIRST FULL STATE
SCS,2 7 COUNT=COUNT/2
AND,2 M6 SCRUB
FOR,2 M6 INVERT TO FORM INDEX
B *+2
PIKF1 LI,2 8 START WITH EIGHTH STATE
PIKUS1 LB,4 SB;HQ,2 PICK UP QUEUE HEAD
BEZ PIKUS3
PIKUS2 CH,15 UH;FLG,4

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S W A P S C H E D U L E R

2168	01	0039B	684003A8		BAZ	SSIN	GET ONE WHO NEEDS TO COME IN
2169	01	0039C		PIKUS25	RES	0	
2170	01	0039C	72480000 X		LB,4	UB:FL,4	MOVE TO NEXT IN W
2171	01	0039D	6930039A		BNEZ	PIKUS2	
2172		01 0039E		PIKUS3	EQU	*	
2173	01	0039E	20200001 A		AI,2	1	NEXT STATE
2174	01	0039F	2120000C A		CI,2	SEXU	MUST BE EXECUTABLE
2175	01	003A0	68200398		BLE	PIKUS1	IT IS, GET HEAD AND LOOK
2176	01	003A1	22E00000 A	N81IN	LI,14	0	
2177	01	003A2	35E00000 X		STW,14	S:ISUN	
2178	01	003A3	68000464		B	USERSOUT	
2179				*			
2180	01	003A4	22000000 A	PIKUS5	LI,0	0	ZERO ZERO
2181	01	003A5	22F00001 A		LI,R15	RTR	RESTORE READY TO RUN BIT
2182	01	003A6	72280000 X		LB,R2	UB:US,R4	RESTORE USER STATE NUMBER
2183				*			BEFORE CONTINUING SCAN
2184	01	003A7	6800039C		B	PIKUS25	TRY ANOTHER

S W A P S C H E D U L E R

2186
 2187
 2188
 2189
 2190
 2191
 2192
 2193
 2194
 2195
 2196
 2197
 2198
 2199 01 003A8 31400000 X
 2200 01 003A9 693003B0
 2201 01 003AA 32700000 X
 2202 01 003AB 31700000 X
 2203 01 003AC 693003B0
 2204 01 003AD 32700000 X
 2205 01 003AE 683004C6
 2206 01 003AF 680003A1
 2207 01 003B0
 2208 01 003B0 53080000 X
 2209 01 003B1 681003B8
 2210 01 003B2 6A6004F2
 2211 01 003B3 680003A4
 2212 01 003B4 52780000 X
 2213 01 003B5 207F8000 A
 2214 01 003B6 55780000 X
 2215 01 003B7 22000000 A
 2216 01 003B8
 2217 01 003B8 35400000 X
 2218 01 003B9 72E80000 X
 2219 01 003BA 75000000 X
 2220 01 003BB 72680000 X
 2221 01 003BC 6A1003DB
 2222 01 003BD 52F80000 X

* AT THIS POINT WE KNOW WHO WE WANT TO BRING IN.
 * REGISTERS ARE:
 * 0 = 0
 * 4 = USER #
 * 3 = Q HE IS IN.
 *
 * OTHER REGISTERS USED CONSISTANTLY ARE:
 * 1 = UBIAPR ASSOCIATED PROCESSOR ROOT
 * 2 = UBIAPR ASSOCIATED PROCESSOR OVRLAY SEG.
 * 15 = PAGES NEEDED
 * 14 = UHIFLG,4
 *

SSIN	CW,R4	S:ISUNF	DID WE FAIL ON THIS GUY
	BNE	SSIN12	NO
	LW,R7	S:SEVF	HAS SWAP SET CHANGE
	CW,R7	S:FSEVF	OCCURRED SINCE WE FAILED
	BNE	SSIN12	YES GO ON
	LW,R7	ALL00UT	DOES ALLYCAT NEED TO GO OUT
	BEZ	PR0UT3	NO
	B	NO1IN	YES
SSIN12	RES	0	
	MTH,0	UHIFLG,4	CHECK FOR BYPASS FLAG
	BGE	SSIN1	NO
	BAL,R6	GIVEUP7	TRIGGER PAGE STEALER RETURN
	B	PIKUS5	STILL WONT FIT
	LH,R7	UHIFLG,R4	GET FLAGS
	AI,R7	=BYPASS	RESET BYPASS BIT
	STH,R7	UHIFLG,R4	PUT AWAY UPDATED FLAGS
	LI,0	0	ZERO ZERO
SSIN1	RES	0	
	STW,4	S:ISUN	SAVE USERS #
	LB,14	UBIPCT,4	PICK UP # OF PAGES USER NEEDS
	STB,0	SBINP	
	LB,6	UB:OV,4	
	BAL,1	PRCAV+1	
	LH,15	UHIFLG,4	

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 2223 01 003BE 21F00200 A
 2224 01 003BF 684003C8
 2225 01 003C0 72680000 N
 2226 01 003C1 2560000B A
 2227 01 003C2 20600000 N
 2228 01 003C3 727C0000 A
 2229 01 003C4 38E00007 A
 2230 01 003C5 21F00080 A
 2231 01 003C6 694003CC
 2232 01 003C7 680003D0

S W A P S C H E D U L E R

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CI,15 JIC
 BAZ CHKDELTEL
 LBAD,6 UXIJIT,4
 SLS,6 11
 AI,6 JBPPC
 LB,7 0,6
 SW,14 7
 CI,15 TIC
 BANZ CHKDT4
 B PR0CAVL

SEE IF THE GUYS PARTIALLY IN CORE
 NOPE!
 SUBTRACT THE PAGES HE HAS
 FROM OUR REQUIREMENT

IS TEL IN CONTROL
 YES GET TEL
 NO GET OTHER PR0CS

2234
 2235
 2236
 2237
 2238 01 003C8
 2239 01 003C8 21F00080 A
 2240 01 003C9 684003CE
 2241 01 003CA 6A20053B
 2242 01 003CB 6A20055B
 2243 01 003C6
 2244 01 003CC 72680000 X
 2245 01 003CD 680003D9
 2246 01 003CE 6A200550
 2247 01 003CF 6A20055B

*
 * CHECK TO SEE IF DEL OR TEL NEED TO BE
 * ASSOCIATED OR DE-ASSOCIATED
 *
 CHKDELTEL EQU \$
 CI,15 TIC IS TEL IN CONTROL
 BAZ CHKDT3
 BAL,2 ITEL INC TEL
 BAL,2 IOV
 CHKDT4 EQU \$
 LB,6 UB:ACP,4 GET COMMAND PROC #
 B PRCAYM1
 CHKDT3 BAL,2 IPR0CS COUNT UP PROCS
 BAL,2 IOV

S W A P S C H E D U L E R

2249
 2250
 2251
 2252 01 003DU
 2253 01 003D0 21F00040 A
 2254 01 003D1 694003D4
 2255 01 003D2 72680000 X
 2256 01 003D3 693003D5
 2257 01 003D4 72680000 X
 2258 01 003D5 6A1003DB
 2259 01 003D6 72680000 X
 2260 01 003D7 6A1003DB
 2261 01 003D8 72680000 X
 2262 01 003D9 221003E6
 2263 01 003DA 003DA
 2264 01 003DA 20600000 A
 2265 01 003DB 683003E5
 2266
 2267 01 003DC
 2268 00000001
 2269 01 003DC 531C0000 X
 2270
 2271
 2272 01 003DD 728C0000 N
 2273 01 003DE 693003E5
 2274
 2275 01 003DF
 2276 01 003DF 33100000 X
 2277
 2278 01 003E0 73100000 X
 2279 01 003E1 727C0000 X
 2280 01 003E2 30E00007 A
 2281 01 003E3 72700000 X
 2282 01 003E4 756E0000 X
 2283 01 003E5
 2284 01 003E5 68020000 A

*
 * NOW MAKE SURE THE NECESSARY PROCESSORS ARE AVAILABLE
 *
 PRC0AVL EQU *
 CI,15 DIC
 BANZ *+3
 LB,6 UB:ASP,4
 BNEZ *+2
 LB,6 UB:DB,4
 BAL,1 PRC0AV+1
 LB,6 UB:APR,4 MAKE PRC0 ROOT AVAIL
 BAL,1 PRC0AV+1
 LB,6 UB:APB,4 MAKE PRC0 OVERLAY AVAIL
 PRC0AVM1 LI,1 SWIPEPGS
 PRC0AV EQU *
 AI,6 0
 BEZ PRC0AV1
 *
 DB1 PERFORM
 DB PFRQ
 MTH,+1 PH:FRQ,R6 BUMP REQUEST COUNT
 FIN PFRQ
 *
 LBAD,8 PX:HPP,6
 BNEZ PRC0AV1
 *
 DB1 PERFORM
 MTW,1 C:N0PR0C COUNT UP # TIMES NOT AVAIL
 *
 MTB,1 SB:NP
 LB,7 PB:PSZ,6
 AW,14 7
 LB,7 SB:NP PUT PRC0 INTO INSWAP LIST
 STB,6 SB:PNL,7
 PRC0AV1 RES 0
 B 0,1

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01 003E6

2286
2287
2288
2289
2290
2291
2292 01 003E6 35E00000 X
2293 01 003E7 20E00000 A
2294 01 003E8 68300000 X
2295 01 003E9 60000037 A
2296 01 003EA 02200030 A
2297 01 003EB 2A100000 X
2298 01 003EC 2A500000 X
2299 01 003ED 24000000 X
2300 01 003EE 24500000 X
2301 01 003EF 60000027 A
2302 01 003F0 22300000 N
2303 01 003F1 38E00000 X
2304 01 003F2 69100406
2305 01 003F3 68300000 X
2306

S W A P S C H E D U L E R

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SWIPEPGS EQU *

*
* NOW WE KNOW EXACTLY HOW MANY PAGES WE NEED.
* FIRST WE'LL GET THE FREE ONES, THEN TRY TO SWIPE
* SOME FROM UNUSED PROCESSORS
*

STW,14 S:PCT
AI,14 0
BE GOTEXAC
DISABLE
LCI 3
LM,1 DOUBLEZERO
LM,5 MIFPPH
STM,0 MIFPPH
STM,5 S:FPPH
ENABLE
LI,3 PPR0CS
SW,R14 S:FPPC
BLZ GOTNUF
BEZ SWAPIN
B PFA

PICK UP ALL FREE PAGES
(ASSUMES M AND S:FPPH,T,C IN
SEQUENCE)

CHECK FOR FIT WITH FREE PAGES
YES
EXACTLY EVEN
FALL THROUGH TO PFA

SWAP SCHEDULER

```

2308 *
2309 * ACCUMULATE A LIST OF ALL FREE, IN-CORE SHARED PROCESSORS
2310 *
2311 * THE SHARED PROCESSOR TABLE, PXIHPP, WILL BE SCANNED A
2312 * DOUBLEWORD AT A TIME TO QUICKLY SKIP OVER THE MAJORITY
2313 * CASE OF PROCESSEORS WHICH ARE NOT IN CORE. A NON-ZERO
2314 * DOUBLEWORD LOOK WILL TRIGGER A DETAIL SCAN OF THAT AREA.
2315 * THOSE IN-CORE PROCESSORS WITH ZERO USE COUNT(PBUC) WILL
2316 * BE ADDED TO THE LIST OF ACQUIRABLE PROCESSORS(SIFPL) BY
2317 * GETPRCPG AND THE TOTAL PAGES WHICH MAY BE ACQUIRED FROM
2318 * UNUSED SHARED PROCESSORS ACCUMULATED IN S:PRPC.
2319 * NO PROCESSORS WILL ACTUALLY BE KICKED OUT UNTIL IT
2320 * HAS BEEN DETERMINED THAT A SUCCESSFUL SWAP MAY BE
2321 * SCHEDULED.
2322 *
2323 *
2324 01 003F4 PFA RES 0
2325 01 003F4 21300007 N CI,R3 7-:BIG-:BIG-:BIG-:BIG :BIG=1 FOR SIGMA9; 0=SIGMA6
2326 01 003F5 69400403 BANZ PF3A STAY IN SLO LOOP
2327 01 003F6 2530007D N SLS,R3 :BIG=3 ALIGN FOR FAST LOOP SCAN
2328 01 003F7 203FFFFFF A PF2A AI,3 =1 NEXT GROUP
2329 01 003F8 681003FA BGEZ PF1 THERE IS 1
2330 01 003F9 68000404 B PF3B THAT'S ALL, SEE IF SUFFICIENT
2331 01 003FA 12660000 X PF1 LD,6 PXIHPP,3 4 OR 8 ENTITIES
2332 01 003FB 683003F7 BEZ PF2A NONE ARE IN
2333 01 003FC 25300003 N SLS,R3 3-:BIG ALIGN FOR SLO LOOP
2334 01 003FD 20300007 N AI,R3 7-:BIG-:BIG-:BIG-:BIG
2335 01 003FE 72860000 N PF3 LOAD,8 PXIHPP,3 IS IT IN CORE
2336 01 003FF 683003F4 BEZ PFA NOT THIS ONE
2337 01 00400 72260000 X LB,2 PBUC,3 HOW MANY USERS
2338 01 00401 693003F4 BNEZ PFA AT LEAST 1
2339 00000000 DB 0
2340 *S* SCS,3 =5
2341 *S* LW,8 PBT:LOCK,3
2342 *S* SLD,2 5
2343 *S* SLS,8 0,2
2344 *S* AW,3 2
BL PFA IT'S LOCKED IN

```

SWAP SCHEDULER

Job ID	Priority	Time	Address	Label	Instruction	Comment
2345					FIN	
2346	01	00402	6A60055D		BAL,6	GETPRCPG
2347	01	00403	643003FE	PF3A	BDR,R3	PF3
2348	01	00404	38E00000 X	PF3B	SW,R14	SIFPPC
2349	01	00405	69200464		BGZ	USERSOUT
2350	01	00406		G0TNUF	RES	0
2351	01	00406	33100000 X		MTW,+1	S;SEVF
2352	01	00407	32E00000 X		LW,R14	S;ISUN
2353	01	00408	68300000 X		BEZ	SWAPOUT
2354	01	00409	32E00000 X		LW,R14	S;PCT
2355	01	0040A	38E00000 X		SW,R14	S;0SS
2356	01	0040B	38E00000 X		SW,R14	SIFPPC
2357	01	0040C	6910042D		BLZ	RETXCS
2358	01	0040D	68300446		BEZ	D0SWAP
2359	01	0040E	32300000 X		LW,R3	SIFPL
2360	01	0040F	21300001 A		CI,R3	1
2361	01	00410	6820041C		BLE	K0PR0C
2362	01	00411	22800000 A	00RTL	LI,R8	0
2363	01	00412	32300000 X		LW,R3	S;FPL
2364	01	00413	203FFFFFF A		AI,R3	=1
2365	01	00414	32960000 X	SL1	LW,R9	S;FPL,R3
2366	01	00415	31960001 N		CW,R9	S;FPL+1,R3
2367	01	00416	6810041A		BGE	SL2
2368	01	00417	46960001 N		XW,R9	S;FPL+1,R3
2369	01	00418	35960000 X		STW,R9	S;FPL,R3
2370	01	00419	22800004 A		LI,R8	4
2371	01	0041A	64300414	SL2	BDR,R3	SL1
2372	01	0041B	64800411		BDR,R8	00RTL
2373	01	0041C		K0PR0C	RES	0
2374				*	KICKOUT	NECESSARY FREE PROCESSORS
2375				*		
2376	01	0041C	32100000 X		LW,R1	SIFPL
2377	01	0041D	223000FF A	K0PRL	LI,R3	XIFF!
2378	01	0041E	40320000 X		AND,R3	S;FPL,R1
2379	01	0041F	72860000 N		LOAD,R8	PX:HPP,R3
2380	01	00420	72760000 N		LOAD,R7	PX:TTP,R3
2381	01	00421	46700000 X		XW,R7	SIFPPT

LINK IT'S PAGES TO SIFPPH
 NEXT PROCESSOR
 SUBTRACT PROCESSOR TOTAL PAGES
 NOT ENOUGH, TRY FOR USERS TOO

BUMP SWAP SET CHANGE COUNTER
 ANY BODY COMING IN
 NO, THEN WE HAVE NO PAGES
 GET PAGE COUNT REQUIRED
 SUBTRACT USER PAGES
 AND FREE PAGES
 RETURN EXCESS IF ANY
 EXACTLY, D0SWAP
 GET COUNT OF PROCSIN LIST
 SKIP SORT IF ONLY ONE
 YES
 CLEAR SWITCH FLAG
 GET COUNT
 CORRECT INDEX
 GET AN ELEMENT
 CHECK ORDER
 OK SKIP SWITCH
 XCHANGE
 THEM
 AND SET FLAG TO SAY WE DID
 CONTINUE SCAN
 ANOTHER PASS IF ANY SWITCHES

GET COUNT IN LIST
 MASK FOR PROCESSOR NUMBER
 GET LOWEST FREQ PROCESSOR
 GET HEAD OF ITS PAGE CHAIN
 GET TAIL OF PROCS CHAIN
 SWAP WITH SWAPPER CHAIN TAIL

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2382	01	00422	69300425		BNEZ	*+3		GET SOME ALREADY
2383	01	00423	35800000	X	STW,R8	SIFPPH		ELSE ESTABLISH HEAD
2384	01	00424	68000426		B	*+2		
2385	01	00425	758E0000	N	STORE,R8	MX:PPUT,R7		OTHERWISE CHAIN TO TAIL OF SWAPPER C
2386	01	00426	72760000	X	LB,R7	PB:PSZ,R3		ADD SIZE
2387	01	00427	75060000	N	STORE,R0	PX:HP, R3		(ZAP CHAIN HEAD)
2388	01	00428	66700000	X	AWM,R7	SIFPPC		TO PAGE COUNT
2389	01	00429	201FFFFF	A	AI,R1	=1		NEXT PROCESSOR
2390	01	0042A	38E00007	A	SW,R14	R7		AND SUBTRACT FROM REQUIREMENT
2391	01	0042B	6920041D		BGZ	KOPRL		STILL NEED MORE
2392	01	0042C	68300446		BEZ	DOSWAP		EXACTLY
2393	01	0042D	32500000	X	LW,R5	SIFPPH		GET HEAD OF CHAIN
2394	01	0042E	60000037	A	DISABLF			
2395	01	0042F	3A60000E	A	LCW,R6	R14		GET POSITIVE NUMBER TO RETURN
2396	01	00430	31600000	X	CW,R6	SIFPPC		AND COMPARE WITH CURRENT FREE POOL
2397	01	00431	68200435		BLE	RETOK		ALL OK, NOT MORE THAN ARE THERE
2398	01	00432	3AE00000	X	LCW,R14	SIFPPC		TOO MANY, DEFAULT TO ALL
2399	01	00433	68300445		BEZ	RETXCS1		NONE TO RETURN
2400	01	00434	32600000	X	LW,R6	SIFPPC		POSITIVE RETURN COUNT
2401	01	00435	66E00000	X	AWM,R14	SIFPPC		DECREMENT SWAPPER PAGE COUNT
2402	01	00436	69300438		BNE	*+2		SOME LEFT
2403	01	00437	35000000	X	STW,R0	SIFPPT		RETURNING ALL, ZAP TAIL
2404	01	00438	66600000	X	AWM,R6	MIFPPC		ADD COUNT TO FREE PAGE POOL
2405	01	00439	32600000	X	LW,6	MIFPPT		
2406	01	0043A	6930043D		BNEZ	*+3		DOES FREE PAGE CHAIN EXIST
2407	01	0043B	35500000	X	STW,5	MIFPPH		NO, ESTABLISH HEAD
2408	01	0043C	68000440		B	*+4		
2409	01	0043D	755C0000	N	STORE,5	MX:PPUT,6		YES, LINK TO TAIL
2410	01	0043E	68000440		B	*+2		
2411	01	0043F	725A0000	N	LOAD,5	MX:PPUT,5		FIRST BIR,14 FOR CASE OF 1 PAGE
2412	01	00440	65E0043F		BIR,14	=-1		
2413	01	00441	35500000	X	STW,5	MIFPPT		UPDATE TAIL
2414	01	00442	726A0000	N	LOAD,6	MX:PPUT,5		
2415	01	00443	750A0000	N	STORE,0	MX:PPUT,5		ZERO TAIL OF CHAIN
2416	01	00444	35600000	X	STW,6	SIFPPH		UPDATE SWAPPER HEAD
2417	01	00445			RES	0		
2418	01	00445	60000027	A	ENABLE			

RETXCS

RETOK

RETXCS1

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			S W A P		S C H E D U L E R	
2419	01	00446	22100000 N	DBSWAP LI,R1	SWAPIN	ASSUME BEST CASE
2420	01	00447	72E00000 X	LB,R14	SB;BSN	ANY TO OUTSWAP
2421	01	00448	6830044A	BEZ	S+2	NO
2422	01	00449	22100000 N	LI,R1	SWAPOUT	YES
2423	01	0044A		PGCHKM RES	0	
2424	01	0044A	22700000 N	LI,7	M;FPPH	
2425	01	0044B	6C000000 A	T;PGCHK RD,0	0	
2426	01	0044C	68120000 A	BCR,1	0,1	
2427	01	0044D	6U000037 A	DISABLF		
2428	01	0044E	35200000 X	STW,2	J:BASE	
2429	01	0044F	220FFC00 A	LI,0	=1024	MAX POSSIBLE CHAIN LENGTH
2430	01	00450	322E0000 A	LW,2	0,7	
2431	01	00451	6830045B	BEZ	PPR2	
2432	01	00452	65000454	PPR3 BIR,0	S+2	
2433	01	00453	68000459	B	PGSCR	LOOP
2434	01	00454	72B40000 N	LOAD,11	MX;PPUT,2	
2435	01	00455	6830045B	BEZ	PPR2	
2436	01	00456	72240000 N	LOAD,2	MX;PPUT,2	
2437	01	00457	20B00000 N	AI,11	=NPMC	
2438	01	00458	69300452	BNE	PPR3	
2439	01	00459	0F000000 X	PGSCR SCREECH	X'01'	
	01	0045A	00010000 A			

S W A P S C H E D U L E R

2441
 2442
 2443
 2444
 2445
 2446
 2447
 2448
 2449
 2450
 2451
 2452
 2453
 2454
 2455
 2456
 2457
 2458
 2459
 2460
 2461
 2462
 2463
 2464 01 0045B 312E0001 A
 2465 01 0045C 69300459
 2466 01 0045D 20000400 A
 2467 01 0045E 310E0002 A
 2468 01 0045F 69300459
 2469 01 00460 32200000 X
 2470
 2471 01 00461 60000027 A
 2472 01 00462 68020000 A
 2473 EXT

*S*****
 S
 S SCREECH CODE: 01 CALLED FROM SCHED AND SWAPPER *
 S MESSAGE: PAGE CHAIN INCONSISTENCY *
 S SIGNIFICANT REGISTERS: *
 S R0 - NEGATIVE COUNT OF MAX CHAIN LENGTH REMAINING *
 S R1 - RETURN ADDRESS FOR TIPGCHK *
 S R2 - CURRENT PAGE NUMBER IN CHAIN *
 S R7 - ADDRESS OF CHAIN BEING CHECKED(S:FPPH,M:FPPH) *
 S R11 - TEMP FOR CURRENT PAGE BEING CHECKED *
 S REMARKS: THIS CHECK IS ONLY PERFORMED IS SENSE SWITCH *
 S FOUR IS SET AS IT COSTS MUCH CPU TIME. SINCE *
 S THERE ARE MANY REASONS FOR DECLARING A PAGE *
 S CHAIN INCONSISTENT OR DEFECTIVE, AN INSPECTION *
 S OF THE APPROPRIATE CHAIN WILL BE NECESSARY TO *
 S ASCERTAIN THE DEFECT PRESENT. *
 S TIPGCHK WILL REJECT A CHAIN IF: *
 S A.) LINKING FROM HEAD FOR COUNT PAGES DOES NOT *
 S YIELD TAIL. *
 S B.) ANY PAGE IS LESS THAN NPMC (NO PAGE MAP CONST) *
 S C.) THE CHAIN LENGTH EXCEEDS MAXIMUM INDICATING *
 S A CIRCULAR CHAIN. *
 *S*****
 PPR2 CW,2 1,7
 BNE PGSCR
 AI,0 1024
 CW,0 2,7
 BNE PGSCR
 LW,2 JIBASE RESTORE R2
 REF JIBASE
 ENABLE
 B 0,1
 GBTXAC EGU SWAPIN

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2475 01 00463 6A5004E1
 2476 01 00464
 2477
 2478
 2479
 2480
 2481
 2482
 2483 01 00464 32700000 X
 2484 01 00465 47700000 X
 2485 01 00466 32D00000 X
 2486 01 00467 22B00000 A
 2487 01 00468 22700000 A
 2488 01 00469 75700000 X
 2489 01 0046A 75700000 X
 2490 01 0046B 35700000 X
 2491 01 0046C 22900000 A
 2492 01 0046D 22F00201 A
 2493 01 0046E 2U700001 A
 2494 01 0046F 723E0004 05
 2495 01 00470 2130000C A
 2496 01 00471 69200476
 2497 01 00472 32B00000 X
 2498 01 00473 683004C6
 2499 01 00474 2U300000 A
 2500 01 00475 683004D0
 2501
 2502 01 00476 72460000 X
 2503 01 00477 6830046E
 2504 01 00478 31400000 X
 2505 01 00479 683004D0
 2506 01 0047A 51F80000 X
 2507 01 0047B 6940047E
 2508 01 0047C 72480000 X
 2509 01 0047D 68000477
 2510 01 0047E
 2511

S W A P S C H E D U L E R
 USER0R BAL,R5 GIVEUP3 GIVEUP AND RETRY
 USERS0UT EQU *

*
 * WE HAVE TO CHOOSE SOME ONE TO GO OUT.
 * WE'LL TRY FOR JUST 1 USER, BUT ALSO FORM A LIST OF
 * A SET TO SWAP OUT IF NECESSARY
 *
 *

LW,R7 Y8 SET USER0UT IN PR0G FLAG
 STS,R7 S:ISUNF BIT 0 OF S:ISIP
 LW,R13 S:IEVF GET EVENT FLAG COUNTER
 LI,11 0
 LI,7 0
 STB,7 SB:FPN # FREED
 STB,7 SB:BSN
 STW,7 S:IOSS PGS ACQRD FRM USERS
 LI,9 0 TOTAL PAGES ACCUMULATED
 LI,15 JIC+RTR
 US0UT4 AI,7 1
 LB,3 SB:SWP,7
 CI,3 SEXU ARE WE AT QUEUES W0RTH KEEPING
 BG US0UT2 NOT YET
 LW,11 S:ISUN MEAKE 11 NON-ZERO
 BEZ PR0UT3 NO ISUN HAVE ALL OUTSWAP PEOPLE
 AI,3 0 TEST FOR END
 BE GIVEUP
 *
 US0UT2 LB,4 SB:IQ,3 SEARCH Q'S BACKWARD
 BEZ US0UT4
 CW,R4 S:ISUN IS HE THE GUY WE ARE BRINGING IN
 BE GIVEUP
 CH,15 UH:FLG,4
 BANZ US0UT5
 US0UT7 LB,4 UB:BL,4
 B US0UT2+1
 US0UT5 EQU *
 *
 * DON'T SWAP THE ONLY USER WILL
 * WILL SCHEDULE

S W A P S C H E D U L E R

2512	01	0047E	52680000	X	LH,6	UH:FLG2,4	
2513	01	0047F	21600A00	A	CI,6	RTHOLD+CALINT	REAL TIME LOCK IN CORE OR CAL INTERRUPT
2514	01	00480	72580000	X	LB,5	UB:MF,4	DOES HE HAVE I/O GOING
2515	01	00481	6970047C		BCS,7	USOUT7	YES, LOCKED OR I/O GOING
2516	01	00482	72280000	X	LB,2	UB:US,4	
2517	01	00483	2120000C	A	CI,2	SEXU	IS HE EXECUTABLE
2518	01	00484	69200492		BG	USOUT9	NO
2519	01	00485	52580000	X	LH,5	UH:FLG,4	
2520	01	00486	21500001	A	CI,5	RTR	
2521	01	00487	68400492		BAZ	USOUT9	NOPE
2522	01	00488	21602008	A	CI,6	RMAHOLD+SQUAN	RMA LOCK OR NOT HAD SWAP QUANT
2523	01	00489	6940047C		BANZ	USOUT7	YUP...PASS HIM BY
2524					REF,1	JIT	
2525	01	0048A	21500100	A	CI,5	BAT	IS HE BATCH
2526	01	0048B	68400492		BAZ	USOUT9	NO, OK TO SWAP HIM
2527	01	0048C	72580000	N	LOAD,5	UX:JIT,4	GET HIS JIT
2528	01	0048D	2550000B	A	SLS,5	11	MAKE IT A BYTE ADDRESS
2529	01	0048E	20500000	N	AI,5	BA(JB:PNR)=BA(JIT)	
2530	01	0048F	725A0000	A	LB,5	0,5	GET PARTITION NUMBER
2531	01	00490	525A0000	X	LH,5	PLH:FLG,5	CHECK FOR HOLD
2532	01	00491	6910047C		BLZ	USOUT7	HE IS HELD, DONT SWAP HIM
2533					REF	PLH:FLG	
2534		01 00492			EQU	*	
2535	01	00492	72600000	X	LB,6	SB:OSUL	DONT EXCEED TABLE
2536	01	00493	216FFFFFF	N	CI,6	SMAOUT=1	SIZE
2537	01	00494	6810047C		BGE	USOUT7	
2538	01	00495	72680000	N	LOAD,6	UX:JIT,4	PHYS JIT ADDR TO FIND
2539	01	00496	2560000B	A	SLS,6	11	HOW MANY PAGES HE HAS
2540	01	00497	20600000	N	AI,6	JBPPC	
2541	01	00498	728C0000	A	LB,8	0,6	USER PAGE COUNT
2542	01	00499	30900008	A	AW,9	8	ADD TO TOTAL PAGES ACCUM.
2543	01	0049A	66800000	X	AWM,R8	S:OSS	ACCUMULATE TOTAL OF USER PAGES
2544	01	0049B	73100000	X	MTB,1	SB:OSN	
2545	01	0049C	72200000	X	LB,2	SB:OSN	
2546	01	0049D	75440000	X	STB,4	SB:OSUL,2	ADD HIM TO THE BUS SWAP LIST
2547	01	0049E	222004B3		LI,2	ADDPIC	NOW LETS GET ANY PROCESSORS
2548	01	0049F	6A30054B		BAL,3	D0V	THAT COME FREE BECAUSE

USOUT9

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2549	01	004A0	223004AC		LI,3	USOUT10	THIS GUY IS GETTING SWAPPED
2550	01	004A1	52F80000 X		LH,15	UH:FLG,4	
2551	01	004A2	21F00080 A		CI,15	TIC	
2552	01	004A3	69400535		BANZ	DTEL	
2553	01	004A4	223004A8		LI,3	9+4	
2554	01	004A5	21F00040 A		CI,15	DIC	
2555	01	004A6	69400549		BANZ	DDB	
2556	01	004A7	68000547		B	DASP	
2557	01	004A8	72180000 X		LB,1	UB:APR,4	
2558	01	004A9	6A3004B2		BAL,3	CHKPRC	
2559	01	004AA	72180000 X		LB,1	UB:APB,4	
2560	01	004AB	6A3004B2		BAL,3	CHKPRC	
2561		01 004AC		USOUT10	EQU	\$	
2562	01	004AC	22F00201 A		LI,15	JIC+RTR	
2563	01	004AD	32600000 X		LW,6	SI:ISUN	
2564	01	004AE	6830047C		BEZ	USOUT7	
2565	01	004AF	3190000E A		CW,9	14	
2566	01	004B0	6910047C		BL	USOUT7	NOT ENOUGH PAGES YET
2567	01	004B1	680004BF		B	PRBUT2	
2568		01 004B2		CHKPRC	EQU	\$	
2569	01	004B2	73F20000 X		MTB,-1	PB:UC,1	COUNT IT DOWN
2570	01	004B3	69360000 A	ADDPRC	BNEZ	0,3	NOT 0 YET
2571	01	004B4	3190000E A		CW,9	14	
2572	01	004B5	68160000 A		BGE	0,3	
2573	01	004B6	72620000 N		LOAD,6	PX:HPP,1	
2574	01	004B7	68360000 A		BEZ	0,3	NOT IN CORE
2575	01	004B8	72620000 X		LB,6	PB:PSZ,1	# PAGE
2576	01	004B9	68360000 A		BEZ	0,3	NONE
2577	01	004BA	30900006 A		AW,9	6	TOTAL PAGES ACCUM.
2578	01	004BB	73100000 X		MTB,1	SB:FPN	ADD TO FREE PRBC LIST
2579	01	004BC	72600000 X		LB,6	SB:FPN	
2580	01	004BD	751C0000 X		STB,1	SB:FPN,6	
2581	01	004BE	68060000 A		B	0,3	

SWAP SCHEDULER

```

2583
2584
2585
2586
2587
2588
2589
2590      01 004BF
2591 01 004BF 31D00000 X
2592 01 004C0 69300463
2593 01 004C1 72500000 X
2594 01 004C2 683004C6
2595 01 004C3 723A0000 X
2596 01 004C4 6A60055D
2597 01 004C5 645004C3
2598      01 004C6
2599 01 004C6 72700000 X
2600 01 004C7 68300512
2601 01 004C8 22B004CD
2602 01 004C9
2603 01 004C9 22600018 A
2604 01 004CA 725E0000 X
2605 01 004CB 32400005 A
2606 01 004CC 680001A0
2607 01 004CD 647004C9
2608 01 004CE 75700000 X
2609
2610 01 004CF 68000406
2611      01 004DU
2612 01 004D0 33F00000 X
2613
2614 01 004D1 33100000 X
2615 01 004D2 02200030 A
2616 01 004D3 2A500000 X
2617 01 004D4 2U600000 A
2618 01 004D5 683004DF
2619 01 004D6 6U000037 A
    
```

```

*
* DECREMENT ANY ASSOCIATED PROCESSORS FOR USER LIST
* IF WE HAVE ENOUGH PAGE SWAP THE LIST.
* IF NOT, SEE IF THE USERS WE CHOSE MADE ANY PROCESSORS FREE
* IF SO, TAKE THEIR PAGES
* IF NOT GIVE UP. WE CANT FIND A SWAP SET
*
PR0UT2  EQU          *
        CW,R13      S:EVF          TEST FOR ANY EVENTS
        BNE         USER0R        YES
        LB,5        SBIFPN
        BEZ         PR0UT3
        LB,3        SBIFPL,5
        BAL,6       GETPRCPG      GET THEIR PAGES
        BDR,5       *+2
PR0UT3  EQU          *
        LB,7        SB:0SN
        BEZ         SSEXIT
        LI,11       PR0UT5
PR0UT4  RES         0
        LI,6        E,K0
        LB,5        SB:0SUL,7    KICK THE USERS OUT
TIRUE   LW,4        5
        B           RCEO
PR0UT5  BDR,7      PR0UT4
        STB,R7     SI:ISUNF      CLEAR USEROUT FLAG
*                                     (R7 CONTAINS ZERO FROM BDR)
*                                     GO TO RETURN EXCESS AND PERFORM SWAP
GIVEUP  EQU          *
        MTW,-1     SI:0PC
*                                     DECREMENT CTR OF CONSECUTIVE
*                                     SWAP SCHEDULE FAILURES
*                                     COUNT NO SWAP BY ANY MEANS
*                                     CANT SWAP *
        MTW,1      C:NSP
        LCI        3
        LM,5       SI:FPPH
        AI,6       0
        BEZ         GIVEUP6
        DISABLE
    
```

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S W A P S C H E D U L E R

2620	01	004D7	32400000	X	LW,4	MIFPPT	ANY IN CHAIN
2621	01	004D8	683004DD		BEZ	GIVEUP5	NO
2622	01	004D9	75580000	N	STORE,5	MXIPPUT,4	HEAD->TAIL
2623	01	004DA	35600000	X	STW,6	MIFPPT	TAIL -> TAIL
2624	01	004DB	66700000	X	AWM,7	MIFPPC	COUNT => COUNT
2625	01	004DC	680004DF		B	GIVEUP6	
2626	01	004DU			GIVEUP5	EQU	*
2627	01	004DD	02200030	A	LCI	3	
2628	01	004DE	25500000	X	STM,5	MIFPPH	ALL BACK AT ONCE
2629	01	004D			GIVEUP6	EQU	*
2630	01	004DF	60000027	A	ENABLE		
2631	01	004E0	225004E8		LI,5	GIVEUP4	
2632	01	004E1			GIVEUP3	EQU	*
2633	01	004E1	72700000	X	LB,7	SBIBSN	
2634	01	004E2	683A0000	A	BEZ	0,5	
2635	01	004E3	724E0000	X	LB,4	SBIBSUL,7	INCREMENT THEIR PROCESSORS SINCE
2636	01	004E4	6A20054D		BAL,2	IT0RP	
2637	01	004E5	6A200558		BAL,2	I0V	
2638	01	004E6	647004E3		BDR,7	*-3	
2639	01	004E7	680A0000	A	B	0,5	
2640	01	004E8			GIVEUP4	EQU	*
2641	01	004E8	32400000	X	LW,4	SIISUN	
2642	01	004E9	35400000	X	STW,R4	SIISUNF	SAVE FAILING USER
2643	01	004EA	32F00000	X	LW,R15	SISEVF	AND SWAP SET COUNTER
2644	01	004EB	35F00000	X	STW,R15	SIFSEVF	TO DEFINE FAILURE
2645	01	004EC	52F80000	X	LH,15	UHIFLG,4	
2646	01	004ED	21F00200	A	CI,15	JIC	
2647	01	004EE	694004F1		BANZ	GIVEUP1	
2648	01	004EF	6A20054B		BAL,2	D0V	
2649	01	004F0	6A20053E		BAL,R2	DT0RP	DECREMENT TEL OR PROCESSORS
2650	01	004F1			GIVEUP1	EQU	*
2651	01	004F1	22600511		LI,R6	GIVEUPA	SET RETURN
2652	01	004F2	6A700517		GIVEUP7	BAL,R7	TIT0TESZ
2653	01	004F3	202FFFFA	A	AI,R2	=6	ACCOUNT FOR MONITOR OVERLAY
2654	01	004F4	31200000	X	CW,R2	S:PC0RE	CHECK FOR FIT EVER
2655	01	004F5	682004F8		BLE	GIVEUP8	YES
2656	01	004F6	0F000000	X	SCREECH	X'62'	NO IMPOSSIBLE SWAP

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01 004F7 00620000 A

S W A P S C H E D U L E R

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SWAP SCHEDULER

```

2658
2659
2660
2661
2662
2663
2664
2665
2666
2667
2668
2669
2670
2671
2672
2673 01 004F8
2674 01 004F8 60000037 A
2675 01 004F9 32700000 X
2676 01 004FA 38700000 X
2677 01 004FB 32500000 X
2678 01 004FC 38500000 X
2679 01 004FD 681004FF
2680 01 004FE 22500000 A
2681 01 004FF 52380000 X
2682 01 00500 21300800 A
2683 01 00501 68400503
2684 01 00502 32000000 X
2685 01 00503 38000007 A
2686 01 00504 68200001 A
2687 01 00505 31000005 A
2688 01 00506 69200508
2689 01 00507 3A000000 A
2690 01 00508 31000000 X
2691 01 00509 68100508
2692 01 0050A 35000000 X
2693 01 0050B
2694 01 0050B 60000027 A
    
```

```

*****
*S*
*S* SCREECH CODE: 62 CALLED FROM SCHED
*S* MESSAGE: IMPOSSIBLE SWAP CONDITION
*S* SIGNIFICANT REGISTERS:
*S* R0 = USER SIZE IN PAGES LESS LOCKED PROCESSORS
*S* R2 = GROSS USER SIZE IN PAGES
*S* R4 = USER NUMBER
*S* R6 = RETURN ADDRESS FOR GIVEUP7
*S* R15 = USER FLAGS (UH:FLG)
*S* REMARKS: THE USER CHOSEN TO INSWAP WILL NEVER FIT INTO
*S* AVAILABLE PHYSICAL MEMORY. THIS MAY BE DUE TO
*S* EITHER AN OPERATING SYSTEM SOFTWARE PROBLEM OR
*S* ABORTING WITHOUT FIRST RELEASING LOCK.
*****
GIVEUP8 RES 0
DISABLF *** INHIBIT ***
LW,R7 S:ACORE GET AVAIL FLUID PAGES
SW,R7 S:RTCORE SUBTRACT RTHOLD PAGES
LW,R5 S:STL# NUMBER OF STOLEN PAGES
SW,R5 SL:RSVP RESERVED PAGES
BGEZ #+2 ALL ARE RESERVED
LI,R5 0 SET RESERVED CONTRIBUTION TO ZERO
LH,R3 UH:FLG2,R4 GET SECOND FLAGS FOR USER
CI,R3 RTHOLD CHECK FOR REAL TIME LOCK IN CORE
BAZ #+2 NO
LW,R0 S:PCT YES, USE SWAPPER REQUIREMENT
SW,R0 R7 FIND REQUIREMENT DEFICIT
BLEZ 1,R6 HE FITS, RETURN SKIPPING
CW,R0 R5 CAN IT BE SATISFIED BY STOLEN
BG GIVEUP9 NO, JUST SET BYPASS FLAG
LCW,0 0 INVERT
CW,0 S:STLC REMEMBER MOST NEGATIVE
BGE #+2
STW,0 S:STLC
GIVEUP9 RES 0
ENABLE
    
```

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2695 01 0050C 680C0000 A
2696 01 0050D
2697 01 0050D 52780000 X
2698 01 0050E 49700000 X
2699 01 0050F 55780000 X
2700 01 00510 68000512
2701 01 00511 6800050D
2702 01 00512 22000000 A
2703 01 00513 75000000 X
2704 01 00514 35000000 X
2705 01 00515 64000027 A
2706 01 00516 68000000 X

		S W A P		S C H E D U L E R		
		B	0,R6			NORMAL RETURN
GIVEUPB		RES	0			
		LH,7	UH:FLG,4			GET FLAGS
		BR,7	X8000			SET BYPASS BIT
		STH,7	UH:FLG,4			PUT AWAY
		B	SSEXIT			EXIT SWAP SCHEDULER
GIVEUPA		B	GIVEUPB			
SSEXIT		LI,0	0			
		STB,R0	S:ISUNF			CLEAR USEROUT FLAG
		STW,0	SISIP			RESET THE SWAP-IN-PROGRESS FLAG
		ENABLE				
		B	TISEXIT			

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2745 01 0052F 73020000 X
2746 01 00530 693A0000 A
2747 01 00531 30000003 A
2748 01 00532 680A0000 A

MTB,0
BNEZ
AW,RO
B

S U B R O U T I N E S

PB:LCT,R1
O,R5
R3
O,5
TEST FOR LOCK
YES, DONT ADD TO NET TOTAL
ADD SIZE TO NET TOTAL
RETURN

SUBROUTINES

2750								
2751								
2752								
2753								
2754								
2755								
2756								
2757								
2758								
2759								
2760								
2761								
2762								
2763	01	00533	20FFFF80	A	DRTEL1	RSETST	TIC	DECR/RESET TEL
	01	00534	55F80000	X				
2764		01	00535		DTEL	EGU	*	
2765	01	00535	72180000	X		LB,1	UB:ACP,4	GET COMMAND PROC #
2766	01	00536	73F20000	X	DECR	MTB,-1	PB:UC,1	
2767	01	00537	68040000	A		B	0,2	
2768	01	00538	52F80000	X	ISTEL	LSETRST	TIC	INCR/SET TEL
	01	00539	49F00008	N				
	01	0053A	55F80000	X				
2769		01	00539		ISTEL1	EGU	ISTEL+1	ENTRY IF GLAGS IN 15
2770		01	0053B		ITEL	EGU	*	
2771	01	0053B	72180000	X		LB,1	UB:ACP,4	GET COMMAND PROC #
2772	01	0053C	73120000	X	INCR	MTB,1	PB:UC,1	
2773	01	0053D	68040000	A		B	0,2	
2774	01	0053E	21F00080	A	DTORP	CI,R15	TIC	CHECK FOR TEL IN CONTROL
2775	01	0053F	69400535			BANZ	DTEL	YES
2776	01	00540	72180000	X	DPRBCS	LB,1	UB:APR,4	
2777	01	00541	73F20000	X		MTB,-1	PB:UC,1	
2778	01	00542	72180000	X		LB,1	UB:APR,4	
2779	01	00543	73F20000	X		MTB,-1	PB:UC,1	
2780	01	00544	52F80000	X		LH,15	UH:FLG,4	
2781	01	00545	21F00040	A		CI,15	DIC	
2782	01	00546	69400549			BANZ	DDB	
2783	01	00547	72180000	X	DASP	LB,1	UB:ASP,4	DECR ASP

*
 * MISC ROUTINES
 *
 *
 * INCREMENT ASSOCIATED PROCESSOR COUNTS (DECREMENT)
 * BAL ON 2, USFR IS 4
 *
 *

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S U B R O U T I N E S

2784	01	00548	69300536		BNEZ	DECR	
2785	01	00549	72180000 X	DDB	LB,1	UB:DB,4	
2786	01	0054A	68000536		B	DECR	
2787	01	0054B	72180000 X	DBV	LB,1	UB:BV,4	
2788	01	0054C	68000536		B	DECR	
2789	01	0054D	52F80000 X	ITGRP	LH,15	UH:FLG,4	
2790	01	0054E	21F00080 A		CI,15	TIC	
2791	01	0054F	6940053B		BANZ	ITEL	
2792	01	00550	72180000 X	IPROCS	LB,1	UB:APR,4	INCCR PROCS
2793	01	00551	73120000 X		MTB,1	PB:UC,1	
2794	01	00552	72180000 X		LB,1	UB:APB,4	
2795	01	00553	73120000 X		MTB,1	PB:UC,1	
2796	01	00554	52F80000 X		LH,15	UH:FLG,4	
2797	01	00555	21F00040 A		CI,15	DIC	
2798	01	00556	69400559		BANZ	IDB	
2799	01	00557	72180000 X		LB,1	UB:ASP,4	INC ASP
2800	01	00558	6930053C		BNEZ	INCR	
2801	01	00559	72180000 X	IDB	LB,1	UB:DB,4	
2802	01	0055A	6800053C		B	INCR	
2803	01	0055B	72180000 X	IBV	LB,1	UB:BV,4	
2804	01	0055C	6800053C		B	INCR	

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01 0055U

SUBROUTINES

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GETPRCPG EQU

ADD PROCESSOR PAGES TO CURRENT TOTAL AND PLACE PROCESSOR
IN LIST OF PROCESSORS TO BE FREED.

INPUT : R3 = PROCESSOR NUMBER
OUTPUT: S:IFPL = S:IFPL+1
S:IFPL(S:IFPL(0)) = PHIFRQ(R3),0,R3
S:PRPC = S:PRPC+PB:PSZ(R3)
SCRATCH: R7,R8,BITS 0-23 OF R3
CALL: BAL,R6 GETPRCPG
NORMAL RETURN ONLY

2806
2807
2808
2809
2810
2811
2812
2813
2814
2815
2816
2817
2818
2819
2820 01 0055D 33100000 X
2821 01 0055E 32700000 X
2822 00000001
2823 01 0055F 52860000 X
2824 01 00560 55800003 A
2825 01 00561 353E0000 X
2826 01 00562 45300000 X
2827
2828
2829 *S*
2830 01 00563 72760000 X
2831 01 00564 66700000 X
2832 01 00565 680C0000 A
2833
01 00566 00030000 A
01 00567 00300000 A
01 00568 FFFFFFFE A
01 00569 00000090 A
01 0056A 8000R000 A
01 0056B C0300C03 A

MTW,+1 S:IFPL BUMP COUNT OF PROCS IN LIST
LW,R7 S:IFPL GET COUNT
DB PFRQ
LW,R8 PH:FRQ,R3 GET PROCESSOR FREQ
STH,R8 R3 MERGE WITH PROC NUMBER
STW,R3 S:IFPL,R7 ADD TO LIST
AND,R3 M8 SCRUB BACK TO PROCESSOR NUMBER
ELSE
STW,R3 S:IFPL,R7 ADD TO LIST
FIN PFRQ
LB,R7 PB:PSZ,R3 GET SIZE OF PROCESSOR
AWM,R7 S:PRPC ADD TO PAGE TOTAL
B O,R6 RETURN
END

CONTROL SECTION SUMMARY: 01 0056C PT 0 02 0000B PT 0 03 0002C PT 0 04 00001 3 PT 0
05 00009 PT 0

ABRT/00003000
BAT/00000100
BYPASS/00008000
CHKDT3/01 003CE
CHSEH1/01 00208
CHSE2/01 001DF
CHSE5/01 001FE
CK3EX/01 00382
DCBPR8C/00000000
DELA/00000400
DIC/00000040
D8SWAP/01 00446
EC/00002000
F:IDL/01 00UE8
GIVEUPA/01 00511
GIVEUP4/01 004E8
GIVEUP8/01 004F8
GJG3/01 0031D
GRANT/01 00369
IDLO/01 000CC
INIT/00000800
I8C8M1/01 00238
I8C8M5/01 0023E
IT8RP/01 0054D
K8PRL/01 0041D
L8GN8/01 002F7
N8LCT/01 0015C
NREADY/EXT
8PNCL8USR/00000008
PERF8RM/00000001
PF2A/01 003F7
PGSCR/01 00459
PIKUS25/01 00394
PRR2/01 0045B
PRCAVM1/01 003D9
PR8UT3/01 004C6

ADDP8C/01 004B3
BISR4/01 00251
C:IDL/01 000E6
CHKDT4/01 003CC
CHSEH2/01 0020D
CHSE25/01 001ED
CHSE6/01 0021A
CK3UM1/01 0037D
DCBS/00002000
DELN8ASP/01 00166
DISCBPR8C/00000000
D8V/01 0054B
ENBISR4/01 00250
FCN/00000007
GIVEUPB/01 0050D
GIVEUP5/01 004DD
GIVEUP9/01 0050B
GJG4/01 0032E
HANGUP/00000020
IDL1/01 000D8
INTENT/00000002
I8C8M2/01 00241
I8V/C1 0055B
J/00000012
K8PR8C/01 0041C
M8NPR8C/00000000
N8TLNF/01 00137
NULL/00000400
8PNUNBL8CK/01 002F7
PFA/01 003F4
PF3/01 003FE
PIKF1/01 00397
PIKUS3/01 0039E
PPR3/01 00452
PRCAV1/01 003E5
PR8UT4/01 004C9

ALTENT/01 0018E
BITS/00000000
CALINT/00000200
CHKPRC/01 004B2
CHSEH3/01 00214
CHSE3/01 001F2
CHSRT/01 00202
C8CABRT/01 00274
DDB/01 00549
DELSTBAD/01 00175
D8LV/01 00072
DT8RP/01 0053E
ERR/00004000
FLUSH/00000200
GIVEUP1/01 004F1
GIVEUP6/01 004DF
GJG1/01 00310
G8TEXAC/EXT
I/00000001
INCR/01 0053C
INTENTL/01 00074
I8C8M3/01 00247
ISTEL/01 00538
JIC/00000200
L/0000001F
MPBITS/00000000
N8T8FF/01 002F5
8FF10/01 00131
P/000000BA
PFRQ/00000001
PF3A/01 00403
PIKUS1/01 00398
PIKUS5/01 003A4
PPSWP/00000010
PR8CAVL/01 003D0
PR8UT5/01 004CD

ANSPK8C/00000000
BRK/00001000
CHKDELTEL/01 003C8
CHSEH/01 00206
CHSE1/01 001DA
CHSE4/01 001F7
CHS1/01 0024E
C8MP/01 00004
DECR/01 00536
DELTAIN/01 00169
D8L1/01 00071
E:REL/0000001E
EXECUTE/LIST
GETPRCPG/01 0055D
GIVEUP3/01 004E1
GIVEUP7/01 004F2
GJG2/01 00314
G8TNUF/01 00406
I8/00000001
INHIBIT/00000002
INTERACTIVE/01 00220
I8C8M4/01 00248
ITEL/01 00538
K/015C5FFE
L8GN8/01 00250
M12/EXT
N81IN/01 003A1
8PN888ST/00000004
P8/0000000D
PF1/01 003FA
PF3B/01 00404
PIKUS2/01 0039A
PM8N8FF/00000001
PRCAV/01 003DA
PR8UT2/01 004BF
PULLEU/01 00012

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QF0RA1/01 00285
 RCE2/01 001AA
 RELA/01 002CB
 RETXCS1/01 00445
 R0/00000000
 R12/00000000
 R2/00000002
 R6/00000006
 S:SET/03 00000
 SB:SWP/05 00004
 SEB/01 000AV
 SE1/01 000E9
 SE6/01 00181
 SHIRFLG/05 0000U
 SJAC/00001000
 SORTL/01 00411
 SSEXT/01 00512
 SSE41/01 00015
 SSE5A/01 00084
 SSIN/01 003A8
 STABRT/01 00252
 STBEEAC/01 0026F
 STI0MF/01 00223
 STK0T/01 0028C
 STSC/01 0021D
 SWAPD/00000010
 T:BLKV/01 002E5
 T:0FF/01 0012D
 T:REL/01 002C5
 T:SEB/01 0003C
 TEL/01 0000A
 T0TE1/01 00528
 U\$/05 00003
 UNQNEXT/01 00298
 UGFAC/01 002E6
 US0UT2/01 00476
 US0UT9/01 00492

QF0RA2/01 00282
 RCE3/01 001AC
 RELB/01 002DA
 RMAH0LD/00002000
 R1/00000001
 R13/0000000D
 R3/00000003
 R7/00000007
 S:TRNSVEC/01 0021C
 SEABRT/01 0012D
 SEBVRUN/01 00142
 SE4D/01 00116
 SE6A/01 00184
 SIC1/01 000B9
 SL1/01 00414
 SPECFILE/00000004
 SSE1/01 00045
 SSE42/01 0001A
 SSE6/01 00096
 SSIN1/01 003B8
 STABRT1/01 0025F
 STCRD/01 0027A
 STIRC/01 0021F
 STN0P/01 00250
 STSC0M/01 0021C
 SWIPEPGS/01 003E6
 T:CHSE/01 001CB
 T:PULLE1/01 00371
 T:RELV/01 002E5
 T:SS/01 00384
 TEMP/003A0000
 T0TE2/01 0052A
 UFLAGS/00000001
 UNQNEXT1/01 002B1
 USER0R/01 00463
 US0UT4/01 0046E
 UTSPR0C/00000001

S U B R O U T I N E S

RCE0/01 001A0
 RCE4/01 001B0
 RET0K/01 00435
 RTH0LD/00000800
 R10/0000000A
 R14/0000000E
 R4/00000004
 R8/00000008
 SB:RBLK/04 00000
 SEERR/01 0013C
 SETDL/01 00261
 SE4D1/01 00111
 SE7/01 00178
 SIC2/01 000BB
 SL2/01 0041A
 SPECIFIC/00000100
 SSE11/01 00048
 SSE43/01 00035
 SSE7/01 000A8
 SSIN12/01 003B0
 STASP/01 00278
 STIIP/01 00224
 STIRCU/01 00289
 ST0C/01 0021E
 STUGA/01 00287
 SWP/DPI
 T:CHSE0/01 001CA
 T:QH/01 001C3
 T:REL1/01 002CD
 T:T0TESZ/01 00517
 TIC/00000080
 T0TE3/01 00524
 UNQEMPTY/01 002A1
 UNQSETFL/01 002A6
 USERS0UT/01 00464
 US0UT5/01 0047E
 XFDFP/0000000E S

RCE1/01 001A4
 REG2/01 0019D
 RETXCS/01 0042D
 RTR/00000001
 R11/0000000B
 R15/0000000F
 R5/00000005
 R9/00000009
 SB:SET/02 00000
 SEF1/01 000B8
 SETDL1/01 00269
 SE4F/01 0011D
 SE9/01 00186
 SIC3/01 000BF
 SMPSD/01 00008
 SQUAN/00000008
 SSE12/01 0001E
 SSE5/01 00083
 SSE8/01 00061
 ST\$/00000018
 STBEEA/01 00270
 STI0C/01 00231
 STK0/01 00291
 STQA/01 0027F
 STUGFAC/01 00297
 S69PR0C/00000001
 T:0BLIST/01 00052
 T:QT/01 001BC
 T:RES/01 002B6
 T:UQR/01 002DE
 T0TE/01 0052C
 U/05 00003 2
 UNQFILL/01 002A4
 UNQXIT/01 002CD
 US0UT10/01 004AC
 US0UT7/01 0047C
 XFFEP/00000005 S

XFFF7/0000004 S
* EXTERNAL DEFINITIONS

X9FFF/01 00285

19SPD/01 00006

ADD1/01 00309
CHSEN/01 001D1
DELTAGBT/01 0014B
E:ABRT/000000CE
E:CBK/00000008
E:CJC/00000003
E:ERR/0000000C
E:K8/00000018
E:NQR/0000002B
E:8CR/00000022
E:GFAC/00000028
E:SYMD/00000021
E:WU/00000010
IDB/01 00559
ISTEL1/01 00539
R:8CR/00000002
S:SET:/03 00000
SCU/00000000
SC2/00000004
SC6/00000008
SEXU/0000000C
SNSTS/0000001F
SQR/00000014
STI/00000016
ST888/0000000F
T:DLR1/01 00080
T:PULLE/01 00369
T:RUE/01 004CB
T:ISSEM/01 00044
TSS1/01 00388

ALTERR/01 00193
CLK4/01 00377
DPR8CS/01 00540
E:AP/0000001A
E:CBL/00000005
E:CRD/00000002
E:IC/0000001C
E:NC/0000001A
E:NQW/0000002A
E:8FF/0000000E
E:GFI/0000001D
E:SYMF/0000001F
EXU:MASK/01 00000
8WAIT:MASK/01 00002
PGCHKM/01 0044A
R:SYMD/00000001
SB:SET:/02 00000
SC0/00000002
SC3/00000005
SC7/00000009
SE7A/01 0017F
SNULL/0000001E
SQR8/00000015
STI8/00000017
SW/00000012
T:DELISTR/01 0007A
T:RCE/01 002EE
T:ISE/01 000AA
T:IT8TSZ/01 00517
TSS2/01 00389

BLCKD:MASK/01 00003
DASP/01 00547
DRTEL1/01 00533
E:ART/00000014
E:CEC/0000000A
E:CUB/00000006
E:IIP/00000000
E:ND/00000026
E:NSYMD/00000020
E:QA/00000013
E:GMF/00000001
E:UGA/00000016
GETJIT/01 0030B

R:CBA/00000003
R:SYMF/00000000
SB:SWP:/05 00004
SC1/00000003
SC4/00000006
SC8/0000000A
SI8MF/00000011
SQA/00000013
SRT/00000001
STI8CC/01 0021E
T:ACCT8V/01 00044
T:8REG/01 0000A
T:RE/01 0019F
T:ISSE/01 0003E
T:UTSXTS/01 00332
WAIT:MASK/01 00001

CHKPR8T/01 0035C
DELTAG8/01 00149
DTEL/01 00535
E:CBA/00000025
E:CF8/00000024
E:DPA/00000027
E:IP/00000001
E:N8CR/00000023
E:NSYMF/0000001E
E:GE/0000001B
E:SL/00000012
E:UGFAC/00000029
GIVEUP/01 004D0
IPR8CS/01 00550
R:NQW/00000006
REG1/01 00196
SCHED/01 00000
SC10/0000000C
SC5/00000007
SC9/0000000B
SI8W/00000010
SQFI/00000018
SSE0/01 00044
ST88/0000000E
T:CHS/01 00218
T:PGCHK/01 0044B
T:REG/01 00195
T:ISSEC/01 0003E
TRAPEXIT/01 00040

* PRIMARY REFERENCES

ACTIVATE	ADJUSTCNT	ALL88UT	B8TT8M	BT31T80	BUFLAGS	BUFMASK
C:IDLE	C:IDLES	C:IDLESW	C:IDLEW	C:N8PR8C	C:NSP	C:PR8CREG
C:TINC	CLK4PSD	C8C8FF	DID8I8	DOUBLEZER8	ER8	G88DNGT
J:ARC	J:ACCN	J:BASE	J:CTIME	J:DELAT	J:IDELTAT	J:INTENT

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J:JAC
J:UTIMER
LSWAP
MAXG
M6
PB:ILCT
PULLE1
SI:ACBRF
S:FPPC
S:MAPCW
S:PRI0DEC
S:STL#
SB:INP
SETRNST
SL:SQNT
SSIG
T:DELUSZAP
T:SES
U:MISC
UB:FL
UB:SWAP1
UX:JIT
X4000
Y7D

V:JIT
UB:FRS
M:FPPC
MAX0VLY
M7
PB:PSZ
PX:HPP
SICL0CK4
S:FPPH
S:0PC
S:PRPC
S:STLC
SB:0SN
SHIPINC
SL:SGPB
SSTAT
T:ECCP
T:SEXIT
UB:IACP
UB:MF
UB:IUS
WORDCNT
X8
Y7F

J:0VHTIM
JB:PNR
M:FPPH
MB:SPACEJIT
M8
PB:UC
PX:TPP
SICUIS
S:FPPT
S:0SS
S:RTCORE
SACT
SB:0SUL
SL:0IMF
SL:SQUAN
SWAPIN
T:MASTER
T:SGAJIT
UB:IAP0
UB:INECB
UH:AJIT
XFFF
X8000
Y8

S U B R O U T I N E S

J:RNST
JBPPC
M:FPPT
MX:PPUT
NB31T00
PBT:LOCK
RCVPSD
S:0UN
S:FSEVF
S:0UAIS
S:RTIR
SB:FPL
SB:PNL
SL:0IMF
SMA0UT
SWAP0UT
T:PAC
T:SMPFLG
UB:IAPR
UE:0V
UH:DL
XN2
YFF
IBIG

J:TCB
JIT
M:IFREE#GRAN
M17
NPMC
PH:FRQ
REGIPSD
SICUP
S:HIR
S:0UIS
S:SEVF
SB:F0PN
SB:RQ
SL:0PRI0
SNDDX
SYSACT
T:SAVE
T:TELDELCCI
UB:ASP
UB:PCT
UH:FLG
X1
Y004

J:TELFLGS
J0VVPA
M:JITPAGE
M21
NSWAP
PLH:FLG
REGIPSD
S:EVF
S:ISUN
S:PCORE
S:SIP
SB:GJ0BUN
SB:RTUS
SL:QMIN
SPDBASE
T:IAB0RTM
T:SCRATCH\$USER
TEMP0T
UB:BL
UB:PRI0
UH:FLG2
X1FE00
Y008

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J:TIMENT
JTSTACKSZ
MAP
M24
0PNCLSUS
PPR0CS
S:ACCW
S:FPL
S:ISUNF
S:PCT
S:SJACCW
SB:HQ
SB:TQ
SL:RSVP
SPPBASE
T:ACCTEX
TSTACK
UB:DB
UB:PRI0B
UNMAP
X20
Y4

* SECONDARY REFERENCES

C0C:BRK
RESCNCT
C0C:BRKLTR
KT:INTENTRY

C0C:RDC0MP
T:IECBSTORE

ECBFBLK

LB:UN

LN0L

RAPURGE

* NO UNDEFINED SYMBOLS

* ERROR SEVERITY LEVEL: 0

* NO ERROR LINES

