


```

SSSSSSSS YY YY SSSSSSSS MM MM 000000 UU UU
SSSSSSSS YY YY SSSSSSSS MM MM 000000 UU UU
SS SS YY YY SS SSSSSSSS MMMM MMMM 00 00 UU UU
SS SS YY YY SS SSSSSSSS MMMM MMMM 00 00 UU UU
SS SS YY YY SS SSSSSSSS MM MM MM 00 00 UU UU
SSSSSSS YY YY SSSSSSSS MM MM MM 00 00 UU UU
SSSSSSS YY YY SSSSSSSS MM MM MM 00 00 UU UU
SS YY YY SS MM MM MM 00 00 UU UU
SS YY YY SS MM MM MM 00 00 UU UU
SS YY YY SS MM MM MM 00 00 UU UU
SSSSSSSS YY SSSSSSSS MM MM 000000 UUUUUUUUUU .....
SSSSSSSS YY SSSSSSSS MM MM 000000 UUUUUUUUUU .....

```

```

LL IIIIII SSSSSSSS
LL IIIIII SSSSSSSS
LL II SS
LL II SS
LL II SS
LL II SS
LL II SSSSSS
LL II SSSSSS
LL II SS
LL II SS
LL II SS
LL II SS
LLLLLLLLLL IIIIII SSSSSSSS
LLLLLLLLLL IIIIII SSSSSSSS

```

```

1 0001 0 MODULE SYSMOU (
2 0002 0
3 0003 0 LANGUAGE (BLISS32),
4 0004 0 IDENT = 'V04-000'
5 0005 1 BEGIN
6 0006 1
7 0007 1
8 0008 1 *****
9 0009 1 *
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27 0027 1 *
28 0028 1 *
29 0029 1 *****
30 0030 1
31 0031 1 ++
32 0032 1
33 0033 1 FACILITY: MOUNT Utility Structure Levels 1 & 2
34 0034 1
35 0035 1 ABSTRACT:
36 0036 1
37 0037 1 This module contains the code and data needed to mount the system
38 0038 1 disk during system initialization.
39 0039 1
40 0040 1 ENVIRONMENT:
41 0041 1
42 0042 1 STARLET operating system, including privileged system services
43 0043 1 and internal exec routines.
44 0044 1
45 0045 1 --
46 0046 1
47 0047 1
48 0048 1 AUTHOR: Andrew C. Goldstein, CREATION DATE: 1-Nov-1977 19:02
49 0049 1
50 0050 1 MODIFIED BY:
51 0051 1
52 0052 1 V03-010 CDS0005 Christian D. Saether 29-Aug-1984
53 0053 1 Use STAND_ALONE_REBUILD routine to avoid unnecessary
54 0054 1 rebuilds.
55 0055 1
56 0056 1 V03-009 CDS0004 Christian D. Saether 2-Aug-1984
57 0057 1 Test the sysgen flag REBLDSYSD to determine whether

```

58	0058	1		rebuild should be performed.	
59	0059	1			
60	0060	1	V03-008	HH0041 Hai Huang 24-Jul-1984	
61	0061	1		Remove REQUIRE 'OBJDS:[VMSLIB.OBJ]MOUNTMSG.REQ'.	
62	0062	1			
63	0063	1	V03-007	HH0018 Hai Huang 06-May-1984	
64	0064	1		Use \$GETDVI to obtain the physical device name of the	
65	0065	1		system device.	
66	0066	1			
67	0067	1	V03-006	TMH0006 Tim Halvorsen 14-Apr-1984	
68	0068	1		Add MOUNT_FLAGS to list of dummy storage needed for	
69	0069	1		linked-in=MOUNT.	
70	0070	1			
71	0071	1	V03-005	CDS0003 Christian D. Saether 19-Oct-1983	
72	0072	1		Now that volume rebuild works, allow FID and EXT caching.	
73	0073	1			
74	0074	1	V03-004	TCM0001 Trudy C. Matthews 19-Aug-1983	
75	0075	1		Interlock mounts of the system disk with other potential	
76	0076	1		mounters of the same disk in the cluster. Add cluster	
77	0077	1		consistency checking routines.	
78	0078	1			
79	0079	1	V03-003	CDS0002 Christian D. Saether 15-Aug-1983	
80	0080	1		Set OPT_NOEXT_C, OPT_NOFID_C, OPT_NOQUO_C, and OPT_WTHRU	
81	0081	1		to REALCY disable caching.	
82	0082	1			
83	0083	1	V03-002	CDS0001 Christian D. Saether 5-Aug-1983	
84	0084	1		Temporarily disable caching on system disk until	
85	0085	1		xqp cluster rebuild works.	
86	0086	1			
87	0087	1	V03-001	STJ3061 Steven T. Jeffreys, 04-Mar-1983	
88	0088	1		Added definitions of DEVICE_INDEX and CALLERS_ACMOD.	
89	0089	1		These parallel definitions in VMOUNT.	
90	0090	1			
91	0091	1	V02-008	STJ0202 Steven T. Jeffreys, 05-Feb-1982	
92	0092	1		Make sure the OPT_MOUNTVER bit gets set. The first	
93	0093	1		attempt at this ended in disaster.	
94	0094	1			
95	0095	1	V02-007	STJ0175 Steven T. Jeffreys, 06-Jan-1982	
96	0096	1		Set up the database to ensure the system disk	
97	0097	1		is a candidate for mount verification.	
98	0098	1			
99	0099	1	V02-006	ACG0248 Andrew C. Goldstein, 31-Dec-1981 16:56	
100	0100	1		Use default logical name, fix use of \$GETDEV	
101	0101	1			
102	0102	1	V02-005	ACG0181 Andrew C. Goldstein, 13-Oct-1980 15:37	
103	0103	1		Fix cross facility references	
104	0104	1			
105	0105	1	V0104	ACG0123 Andrew C. Goldstein, 12-Feb-1980 18:23	
106	0106	1		Integrate disk rebuild into MOUNT	
107	0107	1			
108	0108	1	V0103	ACG0079 Andrew C. Goldstein, 11-Nov-1979 19:32	
109	0109	1		MOUNT changes for write-back caching	
110	0110	1			
111	0111	1	V0102	ACG0072 Andrew C. Goldstein, 22-Oct-1979 13:53	
112	0112	1		Check primary and secondary device char	
113	0113	1			
114	0114	1	V101	ACG0003 Andrew C. Goldstein, 28-Dec-1978 15:23	

```
: 115      0115  1  !      Add global variables for multi-volume MOUNT
: 116      0116  1  !
: 117      0117  1  !
: 118      0118  1  !      V100   ACG0001      Andrew C. Goldstein, 28-Dec-1978  15:22
: 119      0119  1  !      Previous revision history moved to SYSINIT.REV
: 120      0120  1  !
: 121      0121  1  !
: 122      0122  1  LIBRARY 'SYSSLIBRARY:LIB.L32';
: 123      0123  1  REQUIRE 'LIBS:MOUDEF.B32';
: 124      0655  1
: 125      0656  1
: 126      0657  1  FORWARD ROUTINE
: 127      0658  1      MOUNT_SYSTEM,      ! main routine
: 128      0659  1      MAIN_HANDLER;      ! condition handler
```

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130 0660 1  |*
131 0661 1  |
132 0662 1  | Own storage for general use in the MOUNT utility
133 0663 1  |
134 0664 1  | -
135 0665 1  |
136 0666 1  GLOBAL
137 0667 1  STORED_CONTEXT : BITVECTOR [32], ! store the context of some 1 time only
138 0668 1  MOUNT_FLAGS : LONG INITIAL(0), ! MOUNT flags
139 0669 1  LOCK_STATUS : VECTOR [2], ! Lock status block for $ENQ call
140 0670 1  DEVICE_INDEX : LONG, ! index into PHYS_NAME array
141 0671 1  CALLERS_ACMOD : LONG, ! caller's access mode
142 0672 1  CLEANUP_FLAGS : BITVECTOR [32], ! error cleanup status flags
143 0673 1  CHANNEL : ! channel number for I/O
144 0674 1  MAILBOX_CHANNEL : ! channel number of ACP termination mailbox
145 0675 1  PHYS_BUFFER : VECTOR [20, BYTE],
146 0676 1  ! buffer to construct phys device name
147 0677 1  PHYS_NAME : VECTOR [2]
148 0678 1  INITIAL (0, PHYS_BUFFER), ! descriptor of physical device name
149 0679 1  LOG_BUFFER : VECTOR [20, BYTE],
150 0680 1  ! buffer to construct logical name
151 0681 1  HOME_BLOCK : BBLOCK [512], ! buffer for volume header label or home block
152 0682 1  DEVICE_CHAR : BBLOCK [DIBSK_LENGTH],
153 0683 1  ! buffer for device characteristics
154 0684 1  DEVICE_CHAR2 : BBLOCK [DIBSK_LENGTH],
155 0685 1  ! buffer for 2nd device characteristics
156 0686 1  HOMEBLOCK_LBN, ! LBN of home block read
157 0687 1  HEADER_LBN, ! LBN of file header
158 0688 1  DEV_INDEX, ! index into device data table
159 0689 1  USER_STATUS : VECTOR [2], ! status return for various routines
160 0690 1  CURRENT_RVN, ! RVN of volume being mounted
161 0691 1  CURRENT_VCB : REF BBLOCK, ! address of VCB used by CHECK_HEADER2
162 0692 1  REAL_RVT : REF BBLOCK, ! address of RVT allocated for volume set
163 0693 1  REAL_VCB : REF BBLOCK, ! address of VCB allocated for volume
164 0694 1  REAL_FCB : REF BBLOCK, ! address of FCB allocated for volume
165 0695 1  REAL_WCB : REF BBLOCK, ! address of window allocated for volume
166 0696 1  REAL_VCA : REF BBLOCK, ! address of cache block allocated
167 0697 1  REAL_AQB : REF BBLOCK, ! address of AQB allocated for volume
168 0698 1  LOG_ENTRY : REF BBLOCK, ! address of logical name entry
169 0699 1  MTL_ENTRY : REF BBLOCK, ! address of mounted volume list entry
170 0700 1  SLOG_ENTRY : REF BBLOCK, ! address of volume set logical name entry
171 0701 1  SMTL_ENTRY : REF BBLOCK, ! address of volume set mounted volume list entry
172 0702 1
173 0703 1  DEVCHAR_DESC : VECTOR [2] INITIAL (DIBSK_LENGTH, DEVICE_CHAR),
174 0704 1  ! descriptor for device characteristics
175 0705 1  DEVCHAR_DESC2 : VECTOR [2] INITIAL (DIBSK_LENGTH, DEVICE_CHAR2);
176 0706 1  ! descriptor for device characteristics
177 0707 1
178 0708 1
179 0709 1
180 0710 1  |*
181 0711 1  |
182 0712 1  | The following area is a hand crafted mount parser output suitable for
183 0713 1  | mounting the system disk.
184 0714 1  |
185 0715 1  | -
186 0716 1  |

```

```

: 187 0717 1 GLOBAL
: 188 0718 1 MOUNT_OPTIONS : BITVECTOR [64] ! option flags
: 189 0719 1 INITIAL (
: 190 0720 2 (1^OPT_SYSTEM OR ! First 32 bits
: 191 0721 2 1^OPT_WRITE OR
: 192 0722 2 1^OPT_BLOCK OR
: 193 0723 2 1^OPT_OVR_ID OR
: 194 0724 2 1^OPT_DEVICE OR
: 195 0725 1 1^OPT_LABEL)
: 196 0726 2 (1^(OPT_MOUNTVER-32) OR ! Last 32 bits
: 197 0727 2 1^(OPT_NOQUO_C-32) OR
: 198 0728 2 1^(OPT_WTHRU=32))
: 199 0729 1 )
200 0730 1
201 0731 1 PROTECTION : INITIAL (0), ! value of /PROTECTION switch
202 0732 1 OWNER_UIC : INITIAL (0), ! value of /OWNER UIC switch
203 0733 1 USER_OIC : INITIAL (0), ! value of /USER OIC switch
204 0734 1 EXTENSION : INITIAL (0), ! value of /EXTENSION switch
205 0735 1 WINDOW : INITIAL (0), ! value of /WINDOW switch
206 0736 1 ACCESSED : INITIAL (0), ! value of /ACCESSED switch
207 0737 1 BLOCKSIZE : INITIAL (0), ! value of /BLOCK switch
208 0738 1 EXT_CACHE : INITIAL (0), ! value of /CACHE=(EXTENT=n) switch
209 0739 1 FID_CACHE : INITIAL (0), ! value of /CACHE=(FILE=n) switch
210 0740 1 QUO_CACHE : INITIAL (0), ! value of /CACHE=(QUOTA=n) switch
211 0741 1 EXT_LIMIT : INITIAL (0), ! value of /CACHE=(LIMIT=n) switch
212 0742 1 DEVICE_COUNT : INITIAL (1), ! number of devices specified
213 0743 1 LABEL_COUNT : INITIAL (1), ! number of volume labels specified
214 0744 1 LOG_NAME : VECTOR [2], ! logical name of system disk
215 0745 1 STRUCT_NAME : VECTOR [2], ! descriptor of structure name
216 0746 1 VID_STRING : VECTOR [2], ! descriptor of VISUAL ID string
217 0747 1 COMMENT_STRING : VECTOR [2], ! descriptor of COMMENT string
218 0748 1 ACP_STRING : VECTOR [2], ! descriptor of ACP device or name string
219 0749 1 DRIVE_COUNT : VECTOR [1], ! value of /DRIVES switch
220 0750 1
221 0751 1 PARSE_IMP_END : VECTOR [0]; ! end of data area
222 0752 1
223 0753 1 GLOBAL BIND
224 0754 1 LABEL_STRING = DESCRIPTOR ('SYSTEMDISK') : VECTOR;
: 225 0755 1 ! dummy volume label of system disk

```

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227 0756 1 GLOBAL ROUTINE MOUNT_SYSTEM (SYS_CHANNEL) =
228 0757 1
229 0758 1 |++
230 0759 1 |
231 0760 1 | FUNCTIONAL DESCRIPTION:
232 0761 1 |
233 0762 1 |     This routine mounts the system disk (i.e., the disk to which the
234 0763 1 |     channel is assigned) and starts the ACP.
235 0764 1 |
236 0765 1 |
237 0766 1 | CALLING SEQUENCE:
238 0767 1 |     MOUNT_SYSTEM (ARG1)
239 0768 1 |
240 0769 1 | INPUT PARAMETERS:
241 0770 1 |     ARG1: channel number assigned to disk
242 0771 1 |
243 0772 1 | IMPLICIT INPUTS:
244 0773 1 |     own storage of this module
245 0774 1 |
246 0775 1 | OUTPUT PARAMETERS:
247 0776 1 |     NONE
248 0777 1 |
249 0778 1 | IMPLICIT OUTPUTS:
250 0779 1 |     NONE
251 0780 1 |
252 0781 1 | ROUTINE VALUE:
253 0782 1 |     1 if successful, assorted statuses if not
254 0783 1 |
255 0784 1 | SIDE EFFECTS:
256 0785 1 |     s,ystem disk mounted, ACP started, logical name created
257 0786 1 |
258 0787 1 | --
259 0788 1 |
260 0789 2 BEGIN
261 0790 2
262 0791 2 LOCAL
263 0792 2 MOUNT_IOSB      : VECTOR [2],
264 0793 2 ALLDEVNAM_BUF   : VECTOR [NAMEBUF_LEN, BYTE]
265 0794 2               : INITIAL (BYTE ('MOU$', REP NAMEBUF_LEN-4 OF (' '))),
266 0795 2 ALLDEVNAM_DESC : VECTOR [2] INITIAL (0, ALLDEVNAM_BUF),
267 0796 2 DEVICE_ITMLST  : BBLOCK [(2 * 12) + 4] INITIAL
268 0797 2
269 0798 2 |
270 0799 2 | 1st item - device name
271 0800 2 |
272 0801 2 | (WORD (20),           | Length of dev name buffer
273 0802 2 | WORD (DVIS_DEVNAM),  | Item code for device name
274 0803 2 | LONG (PHYS_BUFFER),  | Dev name buffer address
275 0804 2 | LONG (PHYS_NAME),    | Returned dev name length
276 0805 2 |
277 0806 2 | 2nd item - allocation class name
278 0807 2 |
279 0808 2 | WORD (NAMEBUF_LEN - 4),
280 0809 2 | WORD (DVIS_ALDEVNAM),
281 0810 2 | LONG (ALLDEVNAM_BUF + 4),
282 0811 2 | LONG (ALLDEVNAM_DESC),
283 0812 2 |

```



```

284 0813      ! End of list.
285 0814      !
286 0815      ! LONG (0)),
287 0816      ! STATUS,      ! system service status
288 0817      ! P;          ! pointer into characteristics block
289 0818
290 0819      EXTERNAL
291 0820      EXESGL_STATIC_FLAGS : ADDRESSING MODE (GENERAL) BITVECTOR [32],
292 0821      DEV_CTR          : BBLOCK FIELD (DC);
293 0822      ! device value block context fields
294 0823
295 0824      EXTERNAL LITERAL
296 0825      EXESV_REBLDSYSD;
297 0826
298 0827      EXTERNAL ROUTINE
299 0828      READ_HOMEBLOCK,      ! read disk home block
300 0829      MOUNT_DISK1,      ! mount disk, level 1
301 0830      MOUNT_DISK2,      ! mount disk, level 2
302 0831      STAND_ALONE_REBUILD, ! rebuild disk bitmaps and quota file
303 0832      GET_DEVICE_CONTEXT; ! get device lock value block context
304 0833
305 0834
306 0835      ! Enable the condition handler.
307 0836      !
308 0837
309 0838      ENABLE MAIN_HANDLER;
310 0839
311 0840      CALLERS_ACMOD = PSL$C_SUPER;      ! used for logical name access mode
312 0841      CHANNEL = .SYS_CHANNEL;
313 0842
314 0843      !
315 0844      ! Take out a lock to synchronize all mounts of this device in a cluster.
316 0845      ! First we must construct the lock resource name (use the allocation class
317 0846      ! name returned by $GETDVI).
318 0847      !
319 0848
320 0849      P STATUS = $GETDVIW (CHAN = .CHANNEL,
321 0850      ITMLST = DEVICE_I$MLST,
322 0851      P EFN = MOUNT_EFN,
323 0852      IOSB = MOUNT_IOSB);
324 0853      IF NOT .STATUS THEN ERR_EXIT (.STATUS);
325 0854      ALLDEVNAM_DESC[0] = .AL[DEVNAM_DESC[0] + 4;
326 0855
327 0856      P STATUS = $ENQW (LKMODE = LCK$K_EXMODE,
328 0857      P P LKSB = LOCK_STATUS,
329 0858      P P FLAGS = LCK$M_SYSTEM,
330 0859      P P RESNAM = ALLDEVNAM_DESC,
331 0860      P EFN = MOUNT_EFN,
332 0861      ACMODE = PSL$C_EXE$);
333 0862      IF NOT .STATUS THEN ERR_EXIT (.STATUS);
334 0863
335 0864      ! Get the device characteristics and do device type validation: Make sure
336 0865      ! the device is mountable at all, and check that the mount qualifiers are
337 0866      ! consistent with the device type. A mismatch between primary and secondary
338 0867      ! device characteristics indicates a spooled device or something else strange.
339 0868      ! Reject such.
340 0869

```

EX
Mo
CL
AC
CL
CN
CN
CO
CO
CO
QU
FA
DS
DS
RE
CJ
CS
CS
DI
SY
SY
SY

```

341 0870 2
342 0871 2 $GETCHN (CHAN = .CHANNEL, PRIBUF = DEVCHAR_DESC, SCDBUF = DEVCHAR_DESC2);
343 0872 2
344 0873 2 IF CH$NEQ (DIB$K_LENGTH, DEVICE_CHAR, DIB$K_LENGTH, DEVICE_CHAR2, 0)
345 0874 2 OR NOT .DEVICE_CHAR[DEV$V_FOD]
346 0875 2 THEN ERR_EXIT (SS$_NOTFILEDEV);
347 0876 2
348 0877 2 IF NOT .DEVICE_CHAR[DEV$V_AVL]
349 0878 2 THEN ERR_EXIT (SS$_DEVOFFLINE);
350 0879 2
351 0880 2 IF .DEVICE_CHAR[DEV$V_MNT]
352 0881 2 THEN ERR_EXIT (SS$_DEVMOUNT);
353 0882 2
354 0883 2 IF .DEVICE_CHAR[DEV$V_SQD]
355 0884 2 THEN ERR_EXIT (SS$_NOTFILEDEV);
356 0885 2
357 0886 2
358 0887 2 ! The following is for reference only. The physical device name is now
359 0888 2 ! obtained with the $GETDVIW system service, rather than formatting device
360 0889 2 ! name and the unit number.
361 0890 2
362 0891 2 ! Construct the physical device name by appending the ascii unit number to
363 0892 2 ! the device name in the device characteristics.
364 0893 2
365 0894 2
366 0895 2 !PHYS_NAME[0] = 20;
367 0896 2 !PHYS_NAME[1] = PHYS_BUFFER;
368 0897 2 $FAO (
369 0898 2     DESCRIPTOR ('!AC!UW:'),
370 0899 2     PHYS_NAME[0],
371 0900 2     PHYS_NAME[0],
372 0901 2     DEVICE_CHAR + .DEVICE_CHAR[DIB$W_DEVNAMOFF],
373 0902 2     .DEVICE_CHAR[DIB$W_UNIT]
374 0903 2 );
375 0904 2
376 0905 2 ! Now attempt to read the home block or volume header label, as appropriate
377 0906 2 ! for the device type.
378 0907 2
379 0908 2
380 0909 2 STATUS = READ_HOMEBLOCK (LABEL_STRING[0]);
381 0910 2
382 0911 2 MOUNT_OPTIONS[OPT_IS_FILES11] = 1;      ! assume volume is Files-11
383 0912 2 IF NOT .STATUS
384 0913 2 AND .STATUS NEQ SS$_INCVOLLABEL
385 0914 2 THEN ERR_EXIT (.STATUS);
386 0915 2
387 0916 3 IF NOT (STATUS = KERNEL_CALL (GET_DEVICE_CONTEXT))
388 0917 2 THEN ERR_EXIT (.STATUS);
389 0918 2
390 0919 2 IF .MOUNT_OPTIONS[OPT_IS_FILES11B]
391 0920 2 THEN MOUNT_DISK2 ()
392 0921 2 ELSE MOUNT_DISK1 ();
393 0922 2
394 0923 2 ! Rebuild the volume if it was improperly dismounted.
395 0924 2 !
396 0925 2
397 0926 2 IF .CLEANUP_FLAGS[CLF_REBUILD]

```

DEF

