G 12

```
            JJJ     OOOOOOOOO     BBBBBBBBBBBB        CCCCCCCCCCCC  TTTTTTTTTTTTTTT  LLL
            JJJ     OOOOOOOOO     BBBBBBBBBBBB        CCCCCCCCCCCC  TTTTTTTTTTTTTTT  LLL
            JJJ     OOOOOOOOO     BBBBBBBBBBBB        CCCCCCCCCCCC  TTTTTTTTTTTTTTT  LLL
            JJJ  OOO         OOO  BBB         BBB  CCC                    TTT        LLL
            JJJ  OOO         OOO  BBB         BBB  CCC                    TTT        LLL
            JJJ  OOO         OOO  BBB         BBB  CCC                    TTT        LLL
            JJJ  OOO         OOO  BBB         BBB  CCC                    TTT        LLL
            JJJ  OOO         OOO  BBB         BBB  CCC                    TTT        LLL
            JJJ  OOO         OOO  BBB         BBB  CCC                    TTT        LLL
            JJJ  OOO         OOO  BBBBBBBBBBBB     CCC                    TTT        LLL
            JJJ  OOO         OOO  BBBBBBBBBBBB     CCC                    TTT        LLL
            JJJ  OOO         OOO  BBBBBBBBBBBB     CCC                    TTT        LLL
JJJ         JJJ  OOO         OOO  BBB         BBB  CCC                    TTT        LLL
JJJ         JJJ  OOO         OOO  BBB         BBB  CCC                    TTT        LLL
JJJ         JJJ  OOO         OOO  BBB         BBB  CCC                    TTT        LLL
JJJ         JJJ  OOO         OOO  BBB         BBB  CCC                    TTT        LLL
JJJ         JJJ  OOO         OOO  BBB         BBB  CCC                    TTT        LLL
JJJ         JJJ  OOO         OOO  BBB         BBB  CCC                    TTT        LLL
   JJJJJJJJJ        OOOOOOOOO     BBBBBBBBBBBB        CCCCCCCCCCCC        TTT        LLLLLLLLLLLLLLL
   JJJJJJJJJ        OOOOOOOOO     BBBBBBBBBBBB        CCCCCCCCCCCC        TTT        LLLLLLLLLLLLLLL
   JJJJJJJJJ        OOOOOOOOO     BBBBBBBBBBBB        CCCCCCCCCCCC        TTT        LLLLLLLLLLLLLLL
```

```
                                                      M  3
**FILE**ID**ASYNCHRON



  AAAAAA      SSSSSSSS  YY      YY  NN      NN    CCCCCCCC  HH      HH  RRRRRRRR      OOOOOO    NN      NN
  AAAAAA      SSSSSSSS  YY      YY  NN      NN    CCCCCCCC  HH      HH  RRRRRRRR      OOOOOO    NN      NN
AA      AA  SS          YY      YY  NN      NN  CC          HH      HH  RR      RR  OO      OO  NN      NN
AA      AA  SS          YY      YY  NN      NN  CC          HH      HH  RR      RR  OO      OO  NN      NN
AA      AA  SS            YY  YY    NNNN    NN  CC          HH      HH  RR      RR  OO      OO  NNNN    NN
AA      AA  SS            YY  YY    NNNN    NN  CC          HH      HH  RR      RR  OO      OO  NNNN    NN
AA      AA    SSSSSS        YY      NN  NN  NN  CC          HHHHHHHHHH  RRRRRRRR    OO      OO  NN  NN  NN
AA      AA    SSSSSS        YY      NN  NN  NN  CC          HHHHHHHHHH  RRRRRRRR    OO      OO  NN  NN  NN
AAAAAAAAAA          SS      YY      NN    NNNN  CC          HH      HH  RR  RR      OO      OO  NN    NNNN
AAAAAAAAAA          SS      YY      NN    NNNN  CC          HH      HH  RR  RR      OO      OO  NN    NNNN
AA      AA          SS      YY      NN      NN  CC          HH      HH  RR    RR    OO      OO  NN      NN      ....
AA      AA          SS      YY      NN      NN  CC          HH      HH  RR    RR    OO      OO  NN      NN      ....
AA      AA  SSSSSSSS        YY      NN      NN    CCCCCCCC  HH      HH  RR      RR    OOOOOO    NN      NN      ....
AA      AA  SSSSSSSS        YY      NN      NN    CCCCCCCC  HH      HH  RR      RR    OOOOOO    NN      NN      ....

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
```

```
ASY
V04
```

```
0 MODULE ASYNCHRON(%TITLE 'Asynchronous service management'
0                 IDENT = 'V04-002'
0                 ) =
1 BEGIN
1
1 !
1 !****************************************************************************
1 !*                                                                          *
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1 !*                                                                          *
1 !****************************************************************************
1 !
1
1 !++
1 ! FACILITY:
1 !       Job controller.
1 !
1 ! ABSTRACT:
1 !       This module contains the routines that manage services that complete
1 !       asynchronously to the original request.  Many such instances require
1 !       communication with remote job controllers in a cluster.
1 !
1 ! ENVIRONMENT:
1 !       VAX/VMS user and kernel mode.
1 !--
1
1 ! AUTHOR: M. Jack, CREATION DATE: 16-Feb-1982
1 !
1 ! MODIFIED BY:
1 !
1 !       V04-002 JAK0236         J A Krycka      14-Sep-1984
1 !               Collect more diagnostic information.
1 !
1 !       V04-001 JAK0235         J A Krycka      12-Sep-1984
1 !               Detect and repair a corrupted incomplete services list in
1 !               SCAN_INCOMPLETE_SERVICES.
1 !
1 !       V03-011 JAK0224         J A Krycka      24-Aug-1984
1 !               In ENTER_REMOTE_REQUEST set a flag if there is no doorbell lock
1 !               defined for the remote job controller (indicating that the
1 !                     remote node is not in the cluster or the remote job controller
1 !                     does not have the queue file open).
1 !
1 !     V03-010 KPL0003         P Lieberwirth,  30-Jul-1984
1 !                     Fix ALL bugs introduced in V03-008.
1 !
1 !     V03-009 KPL0002         P Lieberwirth,  30-Jul-1984
1 !                     Sigh, fix bug in V03-008.  When rewriting predecessor,
1 !                     do not update predecessor pointer to be the deallocated
1 !                     record.  (That took someone with the brain of a turnip.)
1 !
1 !     V03-008 KPL0001         P Lieberwirth,  19-Jul-1984
1 !                     Rewrite predecessor before deallocating SRQ in routine
1 !                     SCAN_INCOMPLETE_SERVICES.  This avoids corrupting the
1 !                     incomplete service list at the possible cost of losing
1 !                     a deallocated record and extra IOs.
1 !
1 !     V03-007 JAK0213         J A Krycka      18-May-1984
1 !                     Continuation of V03-006. Use newly created LCK$M_NODLCKBLK
1 !                     (no deadlock on blocking AST) option on enqueue instead.
1 !
1 !     V03-006 JAK0208         J A Krycka      08-May-1984
1 !                     Use LCK$M_NODLCKWT (no deadlock wait) option on enqueue service
1 !                     for the remote doorbell lock to avoid having the lock manager
1 !                     declare a deadlock situation.
1 !
1 !     V03-005 GRR0001         Gregory R. Robert       09-Sep-1983
1 !                     Supply missing dot in call to delete_files.
1 !
1 !     V03-004 MLJ0115         Martin L. Jack, 30-Jul-1983
1 !                     Changes for job controller baselevel.
1 !
1 !     V03-003 MLJ0114         Martin L. Jack, 23-Jun-1983
1 !                     Changes for job controller baselevel.
1 !
1 !     V03-002 MLJ0113         Martin L. Jack, 26-May-1983
1 !                     Changes for job controller baselevel.
1 !
1 !     V03-001 MLJ0112         Martin L. Jack, 29-Apr-1983
1 !                     Changes for job controller baselevel.
1 !
1 !**
```

```
1 REQUIRE 'SRC$:JOBCTLDEF';
1
1
1 FORWARD ROUTINE
1         CREATE_SRQ_RECORD,
1         PROCESS_REMOTE_SERVICES:        L_OUTPUT_1,
1         SCAN_INCOMPLETE_SERVICES:       NOVALUE,
1         REMOTE_BLOCKING_AST:            NOVALUE,
1         REMOTE_COMPLETION_NONAST:       NOVALUE,
1         REMOTE_COMPLETION_AST:          NOVALUE,
1         ENTER_REMOTE_REQUEST:           NOVALUE,
1         ENTER_REMOTE_REQUEST_AST:       NOVALUE,
1         QUEUE_MASTER_AST:               NOVALUE;
1
1
1 EXTERNAL ROUTINE
1         ABORT_EXECUTION,
1         AFTER_AST:                      NOVALUE,
1         ALLOCATE_MEMORY,
1         ALLOCATE_RECORD:                L_OUTPUT_2,
1         BROADCAST_MESSAGE:              NOVALUE,
1         COMPLETE_JOB:                   NOVALUE,
1         CREATE_SRB:                     NOVALUE,
1         DEALLOCATE_MEMORY:              NOVALUE,
1         DEALLOCATE_RECORD:              NOVALUE,
1         DELETE_FILES:                   NOVALUE,
1         FIND_PENDING_JOBS:              NOVALUE,
1         FLUSH_RECORD:                   NOVALUE,
1         LOCK_QUEUE_FILE:                NOVALUE,
1         PAUSE_EXECUTION,
1         READ_RECORD,
1         RELEASE_RECORD:                 NOVALUE,
1         RESET_EXECUTOR_QUEUE:           NOVALUE,
1         RESUME_EXECUTION,
1         REWRITE_RECORD:                 NOVALUE,
1         SCHEDULE_NONAST:                NOVALUE,
1         SEND_SERVICE_RESPONSE_MESSAGE:  NOVALUE,
1         START_EXECUTION,
1         START_SYMBIONT_STREAM,
1         STOP_SYMBIONT_STREAM,
1         UNLOCK_QUEUE_FILE:              NOVALUE,
1         UPDATE_GETQUI_DATA:             NOVALUE;
1
1
1 LITERAL
1         K_COMPLETE=       0,            ! Complete request with status
1         K_DEALLOCATE=     1,            ! Deallocate request
1         K_RELEASE=        2,            ! Leave request in queue
1         K_REWRITE=        3;            ! Leave request in queue and rewrite
1
1
1 BUILTIN
1         TESTBITSC,
1         TESTBITSS;
```

```
1 GLOBAL ROUTINE CREATE_SRQ_RECORD(FUNC,P1,P2,P3,P4,P5,P6,P7)=
1
1 !++
1 !
1 ! FUNCTIONAL DESCRIPTION:
1 !       This routine allocates, initializes, and enqueues an incomplete service
1 !       record.
1 !
1 ! INPUT PARAMETERS:
1 !       FUNC            - Function code.
1 !       P1-P7           - Function-specific parameters.
1 !
1 ! IMPLICIT INPUTS:
1 !       NONE
1 !
1 ! OUTPUT PARAMETERS:
1 !       NONE
1 !
1 ! IMPLICIT OUTPUTS:
1 !       NONE
1 !
1 ! ROUTINE VALUE:
1 !       Completion status.
1 !
1 ! SIDE EFFECTS:
1 !       NONE
1 !
1 !--
1
2 BEGIN
2 LOCAL
2       SQH:            REF BBLOCK,     ! Pointer to SQH
2       SRQ_N,                          ! Record number of SRQ record
2       SRQ:            REF BBLOCK,     ! Pointer to SRQ record
2       STATUS;                         ! Status return
2
2
2 ! Allocate the queue record, and return if no more.
2 !
2 STATUS = ALLOCATE_RECORD( ; SRQ_N, SRQ);
2 IF NOT .STATUS THEN RETURN .STATUS;
2
2
2 ! Initialize the incomplete service record.
2 !
2 SRQ[SYM$B_TYPE] = SYM$K_SRQ;
2 SRQ[SRQ$L_FUNCTION_CODE] = .FUNC;
2 COPY_SYSID(THIS_SYSID, SRQ[SRQ$T_SENDING_SYSID]);
2
2
2 CASE .FUNC FROM SRQ$K_START_JOB TO SRQ$K_START_SYMBIONT OF
2     SET
2
2
2     [INRANGE, OUTRANGE]:
2         0;
2
```

```
2
2       [SRQ$K_START_JOB]:
3           BEGIN
3           BIND
3               SMQ_N           = P1,                       ! Record number of SMQ
3               SMQ             = P2:   REF BBLOCK,         ! Pointer to SMQ
3               SJH_N           = P3,                       ! Record number of SJH
3               SJH             = P4:   REF BBLOCK;         ! Pointer to SJH
3
3           SRQ[SRQ$V_NO_RESPONSE] = TRUE;
3           SJH[SJH$V_STARTING] = TRUE;
3           COPY_SYSID(SMQ[SMQ$T_SYSID], SRQ[SRQ$T_RECEIVING_SYSID]);
3           SRQ[SRQ$L_P1] = .SMQ_N;
3           SRQ[SRQ$L_P2] = .SJH_N;
2           END;
2
2
2       [SRQ$K_ABORT_JOB]:
3           BEGIN
3           BIND
3               SMQ_N           = P1,                       ! Record number of SMQ
3               SMQ             = P2:   REF BBLOCK,         ! Pointer to SMQ
3               SJH_N           = P3,                       ! Record number of SJH
3               SJH             = P4:   REF BBLOCK;         ! Pointer to SJH
3
3           SJH[SJH$V_ABORTING] = TRUE;
3           COPY_SYSID(SMQ[SMQ$T_SYSID], SRQ[SRQ$T_RECEIVING_SYSID]);
3           SRQ[SRQ$L_P1] = .SMQ_N;
3           SRQ[SRQ$L_P2] = .SJH_N;
2           END;
2
2
2       [SRQ$K_SYNCHRONIZE_JOB]:
3           BEGIN
3           BIND
3               SJH_N           = P1,                       ! Record number of SJH
3               SJH             = P2:   REF BBLOCK;         ! Pointer to SJH
3
3           SJH[SJH$V_SYNCHRONIZE] = TRUE;
3           SRQ[SRQ$V_STALLED] = TRUE;
3           COPY_SYSID(THIS_SYSID, SRQ[SRQ$T_RECEIVING_SYSID]);
3           SRQ[SRQ$L_P1] = .SJH_N;
2           END;
2
2
2       [SRQ$K_START_QUEUE]:
3           BEGIN
3           BIND
3               SMQ_N           = P1,                       ! Record number of SMQ
3               SMQ             = P2:   REF BBLOCK;         ! Pointer to SMQ
3
3           SMQ[SMQ$V_STARTING] = TRUE;
3           SMQ[SMQ$V_STOPPED] = SMQ[SMQ$V_PAUSED] = FALSE;
3           COPY_SYSID(SMQ[SMQ$T_SYSID], SRQ[SRQ$T_RECEIVING_SYSID]);
3           SRQ[SRQ$L_P1] = .SMQ_N;
2           END;
2
```

```
2
2       [SRQ$K_STOP_QUEUE]:
3           BEGIN
3           BIND
3               SMQ_N       = P1,                   ! Record number of SMQ
3               SMQ         = P2:   REF BBLOCK;     ! Pointer to SMQ
3
3           SMQ[SMQ$V_STOPPING] = TRUE;
3           COPY_SYSID(SMQ[SMQ$T_SYSID], SRQ[SRQ$T_RECEIVING_SYSID]);
3           SRQ[SRQ$L_P1] = .SMQ_N;
2           END;
2
2
2       [SRQ$K_PAUSE_QUEUE]:
3           BEGIN
3           BIND
3               SMQ_N       = P1,                   ! Record number of SMQ
3               SMQ         = P2:   REF BBLOCK;     ! Pointer to SMQ
3
3           SMQ[SMQ$V_PAUSING] = TRUE;
3           COPY_SYSID(SMQ[SMQ$T_SYSID], SRQ[SRQ$T_RECEIVING_SYSID]);
3           SRQ[SRQ$L_P1] = .SMQ_N;
2           END;
2
2
2       [SRQ$K_RESUME_QUEUE]:
3           BEGIN
3           BIND
3               SMQ_N       = P1,                   ! Record number of SMQ
3               SMQ         = P2:   REF BBLOCK,     ! Pointer to SMQ
3               FLAGS       = P3:   BBLOCK,         ! Resume control flags
3               ALIGNMENT   = P4,                   ! Alignment pages
3               RELATIVE    = P5,                   ! Relative page offset
3               SEARCH_LEN  = P6,                   ! Search string length
3               SEARCH_ADDR = P7;                   ! Search string address
3
3           SMQ[SMQ$V_RESUMING] = TRUE;
3           COPY_SYSID(SMQ[SMQ$T_SYSID], SRQ[SRQ$T_RECEIVING_SYSID]);
3           SRQ[SRQ$L_P1] = .SMQ_N;
3           SRQ[SRQ$L_P2] = .FLAGS;
3           SRQ[SRQ$L_P3] = .ALIGNMENT;
3           SRQ[SRQ$L_P4] = .RELATIVE;
3           CH$WCHAR(.SEARCH_LEN, SRQ[SRQ$T_P5]);
3           CH$MOVE(.SEARCH_LEN, .SEARCH_ADDR, SRQ[SRQ$T_P5]+1);
2           END;
2
2
2       [SRQ$K_RESET_QUEUE]:
3           BEGIN
3           BIND
3               SMQ_N       = P1,                   ! Record number of SMQ
3               SMQ         = P2:   REF BBLOCK;     ! Pointer to SMQ
3
3           SMQ[SMQ$V_RESETTING] = TRUE;
3           COPY_SYSID(SMQ[SMQ$T_SYSID], SRQ[SRQ$T_RECEIVING_SYSID]);
3           SRQ[SRQ$L_P1] = .SMQ_N;
2           END;
```

```


    [SRQ$K_BROADCAST_MESSAGE]:
        BEGIN
        BIND
            SYSID           = P1,
            USERNAME        = P2:   REF VECTOR[,BYTE],
            LENGTH          = P3,
            ADDRESS         = P4;

        SRQ[SRQ$V_NO_RESPONSE] = TRUE;
        COPY_SYSID(.SYSID, SRQ[SRQ$T_RECEIVING_SYSID]);
        CH$MOVE(SRQ$S_BRDCST_USERNAME, .USERNAME, SRQ[SRQ$T_BRDCST_USERNAME]);
        SRQ[SRQ$W_BRDCST_LENGTH] = .LENGTH;
        CH$MOVE(.LENGTH, .ADDRESS, SRQ[SRQ$T_BRDCST_TEXT]);
        END;


    [SRQ$K_DELETE_FILES]:
        BEGIN
        BIND
            SJH             = P1:   REF BBLOCK,         ! Pointer to SJH
            SQR_N           = P2;                       ! Record number of SQR

        SRQ[SRQ$V_NO_RESPONSE] = TRUE;
        COPY_SYSID(SJH[SJH$T_SYSID], SRQ[SRQ$T_RECEIVING_SYSID]);
        SRQ[SRQ$L_P1] = .SQR_N;
        END;


    [SRQ$K_START_SYMBIONT]:
        BEGIN
        BIND
            SMQ_N           = P1,                       ! Record number of SMQ
            SMQ             = P2:   REF BBLOCK;         ! Pointer to SMQ

        SRQ[SRQ$V_STALLED] = TRUE;
        COPY_SYSID(SMQ[SMQ$T_SYSID], SRQ[SRQ$T_RECEIVING_SYSID]);
        SRQ[SRQ$L_P1] = .SMQ_N;
        END;


    TES;


IF NOT .SRQ[SRQ$V_NO_RESPONSE]
THEN
    CREATE_SRB(SRQ[SRQ$T_SRB]);


! If services of another job controller are required, signal it.
!
IF SYSID_NEQ(THIS_SYSID, SRQ[SRQ$T_RECEIVING_SYSID])
AND NOT .SRQ[SRQ$V_STALLED]
THEN
    ENTER_REMOTE_REQUEST(SRQ[SRQ$T_RECEIVING_SYSID]);

```

```
;   384        1422  2
;   385        1423  2  ! Enqueue the record to the incomplete service list.
;   386        1424  2  !
;   387        1425  2  SQH = READ_RECORD(SQH$K_RECNO);
;   388        1426  2  SRQ[SYM$L_LINK] = .SQH[SQH$L_INCOMPLETE_SERVICE_LIST];
;   389        1427  2  SQH[SQH$L_INCOMPLETE_SERVICE_LIST] = .SRQ_N;
;   390        1428  2  REWRITE_RECORD(.SRQ_N);
;   391        1429  2  REWRITE_RECORD(SQH$K_RECNO);
;   392        1430  2
;   393        1431  2
;   394        1432  2  ! Return 0 to indicate that the service is incomplete.
;   395        1433  2  !
;   396        1434  2  0
;   397        1435  1  END;


                                                         .TITLE  ASYNCHRON Asynchronous service management
                                                         .IDENT  \V04-002\

                                                         .PSECT  COMMON,NOEXE,  OVR,2

                                          00000 DIAG_STORAGE_BASE:
                                                         .BLKB   0
                                          00000 DIAG_TRACE:
                                                         .BLKB   96
                                          00060 DIAG_COUNT:
                                                         .BLKB   96
                                          000C0 DIAG_FLAGS:
                                                         .BLKB   4
                                          000C4 WORK_AREA:
                                                         .BLKB   44
                                          000F0 SNDJBC_COUNT:
                                                         .BLKB   132
                                          00174 GETQUI_COUNT:
                                                         .BLKB   40
                                          0019C SNDACC_COUNT:
                                                         .BLKB   28
                                          001B8 SNDSMB_COUNT:
                                                         .BLKB   72
                                          00200 DIAG_STORAGE_END:
                                                         .BLKB   0
                                          00200 FLAGS:   .BLKB   4
                                          00204 IMAGE_DUMP_STSFLG:
                                                         .BLKB   4
                                          00208 THIS_SYSID:
                                                         .BLKB   6
                                          0020E          .BLKB   2
                                          00210 CUR_TIME:
                                                         .BLKB   8
                                          00218 HOURLY_TIME:
                                                         .BLKB   8
                                          00220 HOURLY_PARAMS:
                                                         .BLKB   20
                                          00234 SYMBIONT_COUNT:
                                                         .BLKB   4
                                          00238 QUEUE_REFERENCE_COUNT:
                                                         .BLKB   4
```

```
0023C MBX_MESSAGE_COUNT:
              .BLKB   4
00240 MBX:    .BLKB   4
00244 MBX_END:.BLKB   4
00248 MEMORY_FREE_QUEUES:
              .BLKB   40
00270 NONAST_WORK_QUEUE:
              .BLKB   8
00278 BCB_FREE_LIST:
              .BLKB   4
0027C BCB_ACTIVE_LIST:
              .BLKB   4
00280 GQL_FREE_LIST:
              .BLKB   4
00284 GQL_ACTIVE_LIST:
              .BLKB   4
00288 OPEN_GETQUI_LIST:
              .BLKB   4
0028C PROCESS_DATA_LIST:
              .BLKB   4
00290 SYMBIONT_CONTROL:
              .BLKB   4
00294 SPARE_AREA:
              .BLKB   12
002A0 REMOTE_REQUEST_LKSB:
              .BLKB   8
002A8 QUEUE_FILE_LKSB:
              .BLKB   8
002B0 QUEUE_LOCK_LKSB:
              .BLKB   8
002B8 RSP:    .BLKB   8
002C0 JBC_PRIORITY:
              .BLKB   4
002C4 JBC_PRIVILEGES:
              .BLKB   8
002CC JBC_QUOTAS:
              .BLKB   66
0030E         .BLKB   2
00310 JBC_UIC:.BLKB   4
00314 QUEUE_FAB:
              .BLKB   80
00364 QUEUE_RAB:
              .BLKB   68
003A8 QUEUE_NAM:
              .BLKB   96
00408 QUEUE_XAB:
              .BLKB   88
00460 QUEUE_RSA:
              .BLKB   255
0055F         .BLKB   1
00560 QUEUE_ALQ:
              .BLKB   4
00564 QUEUE_MBF:
              .BLKB   1
00565         .BLKB   3
00568 ACCOUNTING_FABS:
              .BLKB   8
```

```
00570 ACCOUNTING_RABS:
            .BLKB    8
00578 ACCOUNT_FAB_A:
            .BLKB    80
005C8 ACCOUNT_RAB_A:
            .BLKB    68
0060C ACCOUNT_NAM_A:
            .BLKB    96
0066C ACCOUNT_RSA_A:
            .BLKB    255
0076B       .BLKB    1
0076C ACCOUNT_FAB_B:
            .BLKB    80
007BC ACCOUNT_RAB_B:
            .BLKB    68
00800 ACCOUNT_NAM_B:
            .BLKB    96
00860 ACCOUNT_RSA_B:
            .BLKB    255
0095F       .BLKB    1
00960 DIAG_FAB:
            .BLKB    80
009B0 DIAG_RAB:
            .BLKB    68
009F4 MBX_CHAN:
            .BLKB    4
009F8 MBX_IOSB:
            .BLKB    8
00A00 MBX_BUFFER:
            .BLKB    1024
00E00 VALUE_STORAGE_BASE:
            .BLKB    0
00E00 ITEM_PRESENT:
            .BLKB    32
00E20 VALUE_GETQUI_BASE:
            .BLKB    0
00E20 VALUE_ACCOUNTING_MESSAGE:
            .BLKB    6
00E26 VALUE_ACCOUNTING_TYPES:
            .BLKB    4
00E2A VALUE_AFTER_TIME:
            .BLKB    8
00E32 VALUE_ALIGNMENT_PAGES:
            .BLKB    1
00E33 VALUE_BASE_PRIORITY:
            .BLKB    1
00E34 VALUE_BATCH_INPUT:
            .BLKB    6
00E3A VALUE_BATCH_OUTPUT:
            .BLKB    10
00E44 VALUE_BUFFER_COUNT:
            .BLKB    1
00E45 VALUE_CHARACTERISTIC_NAME:
            .BLKB    6
00E4B VALUE_CHARACTERISTIC_NUMBER:
            .BLKB    1
00E4C VALUE_CHARACTERISTICS:
```

```
               .BLKB   16
00E5C VALUE_CHECKPOINT_DATA:
               .BLKB   6
00E62 VALUE_CLI:
               .BLKB   6
00E68 VALUE_CPU_DEFAULT:
               .BLKB   4
00E6C VALUE_CPU_LIMIT:
               .BLKB   4
00E70 VALUE_DESTINATION_QUEUE:
               .BLKB   8
00E78 VALUE_DEVICE_NAME:
               .BLKB   6
00E7E VALUE_ENTRY_NUMBER:
               .BLKB   4
00E82 VALUE_ENTRY_NUMBER_OUTPUT:
               .BLKB   10
00E8C VALUE_EXTEND_QUANTITY:
               .BLKB   2
00E8E VALUE_FILE_COPIES:
               .BLKB   1
00E8F VALUE_FILE_IDENTIFICATION:
               .BLKB   36
00EB3 VALUE_FILE_SETUP_MODULES:
               .BLKB   6
00EB9 VALUE_FILE_SPECIFICATION:
               .BLKB   6
00EBF VALUE_FIRST_PAGE:
               .BLKB   4
00EC3 VALUE_FORM_DESCRIPTION:
               .BLKB   6
00EC9 VALUE_FORM_LENGTH:
               .BLKB   1
00ECA VALUE_FORM_MARGIN_BOTTOM:
               .BLKB   1
00ECB VALUE_FORM_MARGIN_LEFT:
               .BLKB   2
00ECD VALUE_FORM_MARGIN_RIGHT:
               .BLKB   2
00ECF VALUE_FORM_MARGIN_TOP:
               .BLKB   1
00ED0 VALUE_FORM_NAME:
               .BLKB   6
00ED6 VALUE_FORM_NUMBER:
               .BLKB   4
00EDA VALUE_FORM:
               .BLKB   8
00EE2 VALUE_FORM_SETUP_MODULES:
               .BLKB   6
00EE8 VALUE_FORM_STOCK:
               .BLKB   6
00EEE VALUE_FORM_WIDTH:
               .BLKB   2
00EF0 VALUE_GENERIC_TARGET:
               .BLKB   996
012D4 VALUE_JOB_COPIES:
               .BLKB   1
```

```
012D5 VALUE_JOB_LIMIT:
              .BLKB   1
012D6 VALUE_JOB_NAME:
              .BLKB   6
012DC VALUE_JOB_RESET_MODULES:
              .BLKB   6
012E2 VALUE_JOB_SIZE_MAXIMUM:
              .BLKB   4
012E6 VALUE_JOB_SIZE_MINIMUM:
              .BLKB   4
012EA VALUE_JOB_STATUS_OUTPUT:
              .BLKB   10
012F4 VALUE_LAST_PAGE:
              .BLKB   4
012F8 VALUE_LIBRARY_SPECIFICATION:
              .BLKB   6
012FE VALUE_LOG_QUEUE:
              .BLKB   8
01306 VALUE_LOG_SPECIFICATION:
              .BLKB   6
0130C VALUE_NOTE:
              .BLKB   6
01312 VALUE_OPERATOR_REQUEST:
              .BLKB   6
01318 VALUE_OWNER_UIC:
              .BLKB   4
0131C VALUE_PAGE_SETUP_MODULES:
              .BLKB   6
01322 VALUE_PARAMETER_1:
              .BLKB   6
01328 VALUE_PARAMETER_2:
              .BLKB   6
0132E VALUE_PARAMETER_3:
              .BLKB   6
01334 VALUE_PARAMETER_4:
              .BLKB   6
0133A VALUE_PARAMETER_5:
              .BLKB   6
01340 VALUE_PARAMETER_6:
              .BLKB   6
01346 VALUE_PARAMETER_7:
              .BLKB   6
0134C VALUE_PARAMETER_8:
              .BLKB   6
01352 VALUE_PRIORITY:
              .BLKB   1
01353 VALUE_PROCESSOR:
              .BLKB   6
01359 VALUE_PROTECTION:
              .BLKB   4
0135D VALUE_QUEUE:
              .BLKB   6
01363 VALUE_QUEUE_FILE_SPECIFICATION:
              .BLKB   6
01369 VALUE_RELATIVE_PAGE:
              .BLKB   4
0136D VALUE_RESERVED_INPUT_1:
```

```
                        .BLKB   1
        0136E VALUE_RESERVED_INPUT_2:
                        .BLKB   2
        01370 VALUE_RESERVED_INPUT_3:
                        .BLKB   4
        01374 VALUE_RESERVED_INPUT_4:
                        .BLKB   6
        0137A VALUE_RESERVED_OUTPUT_1:
                        .BLKB   10
        01384 VALUE_RESERVED_OUTPUT_2:
                        .BLKB   10
        0138E VALUE_SEARCH_STRING:
                        .BLKB   6
        01394 VALUE_SCSNODE_NAME:
                        .BLKB   6
        0139A VALUE_WSDEFAULT:
                        .BLKB   2
        0139C VALUE_WSEXTENT:
                        .BLKB   2
        0139E VALUE_WSQUOTA:
                        .BLKB   2
        013A0 VALUE_STORAGE_END:
                        .BLKB   0

              JBC$_CLOSEOUT=          266328
              JBC$_NOCMKRNL=          272388
              JBC$_NOOPER=            272532
              JBC$_NOSYSNAM=          272404
              JBC$_OPENIN=            266392
              JBC$_OPENOUT=           266400
              JBC$_READERR=           266416
              JBC$_WRITEERR=          266448
                        .EXTRN  ABORT_EXECUTION
                        .EXTRN  AFTER_AST, ALLOCATE_MEMORY
                        .EXTRN  ALLOCATE_RECORD
                        .EXTRN  BROADCAST_MESSAGE
                        .EXTRN  COMPLETE_JOB, CREATE_SRB
                        .EXTRN  DEALLOCATE_MEMORY
                        .EXTRN  DEALLOCATE_RECORD
                        .EXTRN  DELETE_FILES, FIND_PENDING_JOBS
                        .EXTRN  FLUSH_RECORD, LOCK_QUEUE_FILE
                        .EXTRN  PAUSE_EXECUTION
                        .EXTRN  READ_RECORD, RELEASE_RECORD
                        .EXTRN  RESET_EXECUTOR_QUEUE
                        .EXTRN  RESUME_EXECUTION
                        .EXTRN  REWRITE_RECORD, SCHEDULE_NONAST
                        .EXTRN  SEND_SERVICE_RESPONSE_MESSAGE
                        .EXTRN  START_EXECUTION
                        .EXTRN  START_SYMBIONT_STREAM
                        .EXTRN  STOP_SYMBIONT_STREAM
                        .EXTRN  UNLOCK_QUEUE_FILE
                        .EXTRN  UPDATE_GETQUI_DATA

                        .PSECT  CODE,NOWRT,2

  0CFC 00000            .ENTRY  CREATE_SRQ_RECORD, Save R2,R3,R4,R5,R6,R7,-  ; 1194
                                R10,R11                                       ;
```

```
                              57 00000000G   EF   9E 00002        MOVAB   REWRITE_RECORD, R7                 ;
                              56 00000000'   EF   9E 00009        MOVAB   THIS_SYSID, R6                     ;
                    00000000G EF              00   FB 00010        CALLS   #0, ALLOCATE_RECORD               ; 1233
                              01              50   E8 00017        BLBS    STATUS, 1$                         ; 1234
                                                   04 0001A        RET                                        ;
                     04   AB                  09   90 0001B 1$:    MOVB    #9, 4(SRQ)                         ; 1239
                     0C   AB          04      AC   D0 0001F        MOVL    FUNC, 12(SRQ)                      ; 1240
                     14   AB                  66   D0 00024        MOVL    THIS_SYSID, 20(SRQ)                ; 1241
                     18   AB          04      A6   B0 00028        MOVW    THIS_SYSID+4, 24(SRQ)              ;
               0B         01          04      AC   CF 0002D        CASEL   FUNC, #1, #11                      ; 1244
 0064          004C       0028          001A         00032 2$:    .WORD   3$-2$,-                            ;
 00BA          0088       007E          0074         0003A                4$-2$,-                            ;
 0104          00E9       011D          00C4         00042                7$-2$,-                            ;
                                                                          8$-2$,-                            ;
                                                                          9$-2$,-                            ;
                                                                          10$-2$,-                           ;
                                                                          11$-2$,-                           ;
                                                                          13$-2$,-                           ;
                                                                          15$-2$,-                           ;
                                                                          20$-2$,-                           ;
                                                                          16$-2$,-                           ;
                                                                          17$-2$                             ;
                                              30   11 0004A        BRB     6$                                 ;
                     10   AB                  01   88 0004C 3$:    BISB2   #1, 16(SRQ)                        ; 1260
                          50          14      AC   D0 00050        MOVL    SJH, R0                            ; 1261
                     11   A0                  10   88 00054        BISB2   #16, 17(R0)                        ;
                                              08   11 00058        BRB     5$                                 ; 1262
                          50          14      AC   D0 0005A 4$:    MOVL    SJH, R0                            ; 1276
                     10   A0                  02   88 0005E        BISB2   #2, 16(R0)                         ;
                          50          0C      AC   D0 00062 5$:    MOVL    SMQ, R0                            ; 1277
                     1A   AB        0106      C0   D0 00066        MOVL    262(R0), 26(SRQ)                   ;
                     1E   AB        010A      C0   B0 0006C        MOVW    266(R0), 30(SRQ)                   ;
                     20   AB          08      AC   D0 00072        MOVL    SMQ_N, 32(SRQ)                     ; 1278
                     24   AB          10      AC   D0 00077        MOVL    SJH_N, 36(SRQ)                     ; 1279
                                              6C   11 0007C 6$:    BRB     12$                                ; 1244
                          50          0C      AC   D0 0007E 7$:    MOVL    SJH, R0                            ; 1289
                     11   A0                  20   88 00082        BISB2   #32, 17(R0)                        ;
                     10   AB                  02   88 00086        BISB2   #2, 16(SRQ)                        ; 1290
                     1A   AB                  66   D0 0008A        MOVL    THIS_SYSID, 26(SRQ)                ; 1291
                     1E   AB          04      A6   B0 0008E        MOVW    THIS_SYSID+4, 30(SRQ)              ;
                                            00B4   31 00093        BRW     19$                                ; 1292
                          50          0C      AC   D0 00096 8$:    MOVL    SMQ, R0                            ; 1302
                     11   A0                  01   88 0009A        BISB2   #1, 17(R0)                         ;
                     10   A0        0204      8F   AA 0009E        BICW2   #516, 16(R0)                       ; 1303
                                              4E   11 000A4        BRB     14$                                ; 1304
                          50          0C      AC   D0 000A6 9$:    MOVL    SMQ, R0                            ; 1315
                     11   A0                  04   88 000AA        BISB2   #4, 17(R0)                         ;
                                              44   11 000AE        BRB     14$                                ; 1316
                          50          0C      AC   D0 000B0 10$:   MOVL    SMQ, R0                            ; 1327
                     10   A0                  08   88 000B4        BISB2   #8, 16(R0)                         ;
                                              3A   11 000B8        BRB     14$                                ; 1328
                          50          0C      AC   D0 000BA 11$:   MOVL    SMQ, R0                            ; 1344
                     10   A0          40      8F   88 000BE        BISB2   #64, 16(R0)                        ;
                     1A   AB        0106      C0   D0 000C3        MOVL    262(R0), 26(SRQ)                   ; 1345
                     1E   AB        010A      C0   B0 000C9        MOVW    266(R0), 30(SRQ)                   ;
                     20   AB          08      AC   D0 000CF        MOVL    SMQ_N, 32(SRQ)                     ; 1346
                     24   AB          10      AC   7D 000D4        MOVQ    FLAGS, 36(SRQ)                     ; 1347
                    2C   AB      18   AC  D0 000D9          MOVL    RELATIVE, 44(SRQ)                               ; 1349
                    30   AB      1C   AC  90 000DE          MOVB    SEARCH_LEN, 48(SRQ)                             ; 1350
     31   AB        20   BC      1C   AC  28 000E3          MOVC3   SEARCH_LEN, @SEARCH_ADDR, 49(SRQ)               ; 1351
                                      63  11 000EA 12$:     BRB     20$                                             ; 1244
                    50           0C   AC  D0 000EC 13$:     MOVL    SMQ, R0                                         ; 1361
                    10   A0           20  88 000F0          BISB2   #32, 16(R0)                                     ;
                                      48  11 000F4 14$:     BRB     18$                                             ; 1362
                    10   AB           01  88 000F6 15$:     BISB2   #1, 16(SRQ)                                     ; 1375
                         50      08   AC  D0 000FA          MOVL    SYSID, R0                                       ; 1376
                    1A   AB           60  D0 000FE          MOVL    (R0), 26(SRQ)                                   ;
                    1E   AB      04   A0  B0 00102          MOVW    4(R0), 30(SRQ)                                  ;
     20   AB        0C   BC      0C       28 00107          MOVC3   #12, @USERNAME, 32(SRQ)                         ; 1377
                    40   AB      10   AC  B0 0010D          MOVW    LENGTH, 64(SRQ)                                 ; 1378
     42   AB        14   BC      10   AC  28 00112          MOVC3   LENGTH, @ADDRESS, 66(SRQ)                       ; 1379
                                      34  11 00119          BRB     20$                                             ; 1244
                    10   AB           01  88 0011B 16$:     BISB2   #1, 16(SRQ)                                     ; 1389
                         50      08   AC  D0 0011F          MOVL    SJH, R0                                         ; 1390
                    1A   AB    016C   C0  D0 00123          MOVL    364(R0), 26(SRQ)                                ;
                    1E   AB    0170   C0  B0 00129          MOVW    368(R0), 30(SRQ)                                ;
                    20   AB      0C   AC  D0 0012F          MOVL    SQR_N, 32(SRQ)                                  ; 1391
                                      19  11 00134          BRB     20$                                             ; 1244
                    10   AB           02  88 00136 17$:     BISB2   #2, 16(SRQ)                                     ; 1401
                         50      0C   AC  D0 0013A          MOVL    SMQ, R0                                         ; 1402
                    1A   AB    0106   C0  D0 0013E 18$:     MOVL    262(R0), 26(SRQ)                                ;
                    1E   AB    010A   C0  B0 00144          MOVW    266(R0), 30(SRQ)                                ;
                    20   AB      08   AC  D0 0014A 19$:     MOVL    SMQ_N, 32(SRQ)                                  ; 1403
                         0A      10   AB  E8 0014F 20$:     BLBS    16(SRQ), 21$                                    ; 1410
                                 70   AB  9F 00153          PUSHAB  112(SRQ)                                        ; 1412
            00000000G    EF           01  FB 00156          CALLS   #1, CREATE_SRB                                  ;
                    1A   AB           66  D1 0015D 21$:     CMPL    THIS_SYSID, 26(SRQ)                             ; 1417
                                      07  12 00161          BNEQ    22$                                             ;
                    1E   AB      04   A6  B1 00163          CMPW    THIS_SYSID+4, 30(SRQ)                           ;
                                      0D  13 00168          BEQL    23$                                             ;
          08        10   AB           01  E0 0016A 22$:     BBS     #1, 16(SRQ), 23$                                ; 1418
                                 1A   AB  9F 0016F          PUSHAB  26(SRQ)                                         ; 1420
                0000V    CF           01  FB 00172          CALLS   #1, ENTER_REMOTE_REQUEST                        ;
                                      01  DD 00177 23$:     PUSHL   #1                                              ; 1425
            00000000G    EF           01  FB 00179          CALLS   #1, READ_RECORD                                 ;
                         6B      44   A0  D0 00180          MOVL    68(SQH), (SRQ)                                  ; 1426
                    44   A0           5A  D0 00184          MOVL    SRQ_N, 68(SQH)                                  ; 1427
                                      5A  DD 00188          PUSHL   SRQ_N                                           ; 1428
                         67           01  FB 0018A          CALLS   #1, REWRITE_RECORD                              ;
                                      01  DD 0018D          PUSHL   #1                                              ; 1429
                         67           01  FB 0018F          CALLS   #1, REWRITE_RECORD                              ;
                                      50  D4 00192          CLRL    R0                                              ; 1435
                                          04 00194          RET                                                     ;

; Routine Size:  405 bytes,    Routine Base:  CODE + 0000
```

```
1 ROUTINE PROCESS_REMOTE_SERVICES(SRQ;NEXT_ACTION): L_OUTPUT_1=
1
1 !++
1 !
1 ! FUNCTIONAL DESCRIPTION:
1 !       This routine processes a remote service directed to this node.
1 !
1 ! INPUT PARAMETERS:
1 !       SRQ             - Pointer to SRQ.
1 !
1 ! IMPLICIT INPUTS:
1 !       NONE
1 !
1 ! OUTPUT PARAMETERS:
1 !       NEXT_ACTION     - Code identifying the next action.
1 !
1 ! IMPLICIT OUTPUTS:
1 !       NONE
1 !
1 ! ROUTINE VALUE:
1 !       Completion status.
1 !
1 ! SIDE EFFECTS:
1 !       NONE
1 !
1 !--
1
2 BEGIN
2 MAP
2       SRQ:            REF BBLOCK;     ! Pointer to SRQ
2 LOCAL
2       STATUS;                         ! Status of the request
2
2
2 STATUS = SS$_NORMAL;
2
2
2 CASE .SRQ[SRQ$L_FUNCTION_CODE] FROM SRQ$K_START_JOB TO SRQ$K_DELETE_FILES OF
2     SET
2
2
2     [INRANGE, OUTRANGE]:
2         NEXT_ACTION = K_COMPLETE;
2
2
2     [SRQ$K_START_JOB]:
3         BEGIN
3         LOCAL
3             SMQ_N,                    ! Record number of SMQ
3             SMQ:      REF BBLOCK,     ! Pointer to SMQ
3             SJH_NP,                   ! Record number of predecessor of SJH
3             SJH_P:    REF BBLOCK,     ! Predecessor of SJH
3             SJH_N,                    ! Record number of SJH
3             SJH:      REF BBLOCK;     ! Pointer to SJH
3
3
3         SMQ = READ_RECORD(SMQ_N = SJH_NP = .SRQ[SRQ$L_P1]);
```

```
3          SJH_N = .SMQ[SMQ$L_CURRENT_LIST];
3          WHILE .SJH_N NEQ 0 DO
4              BEGIN
4              SJH = READ_RECORD(.SJH_N);
4              IF .SJH_N EQL .SRQ[SRQ$L_P2]
4              THEN
5                  BEGIN
5                  SJH[SJH$V_STARTING] = FALSE;
5                  STATUS = START_EXECUTION(
5                      .SMQ_N, .SMQ,
5                      .SJH_N, .SJH);
5                  IF NOT .STATUS
5                  THEN
6                      BEGIN
6                      UPDATE_GETQUI_DATA(.SJH_N, .SJH);
6                      SMQ[SMQ$B_CURRENT_JOB_COUNT] = .SMQ[SMQ$B_CURRENT_JOB_COUNT] - 1;
6                      IF .SJH_NP EQL .SMQ_N
6                      THEN
7                          BEGIN
7                          SMQ[SMQ$L_CURRENT_LIST] = .SJH[SYM$L_LINK];
7                          IF .SJH[SYM$L_LINK] EQL 0 THEN SMQ[SMQ$L_CURRENT_LIST_END] = 0;
7                          END
6                      ELSE
7                          BEGIN
7                          SJH_P[SYM$L_LINK] = .SJH[SYM$L_LINK];
7                          IF .SJH[SYM$L_LINK] EQL 0 THEN SMQ[SMQ$L_CURRENT_LIST_END] = .SJH_NP;
7                          REWRITE_RECORD(.SJH_NP);
6                          END;
6                      SJH[SJH$L_CONDITION_1] = .STATUS;
6                      COMPLETE_JOB(.SJH_N, .SJH, .SMQ, 0);
6                      FIND_PENDING_JOBS(.SMQ_N, .SMQ);
6                      END
5                  ELSE
5                      REWRITE_RECORD(.SJH_N);
5
5                  REWRITE_RECORD(.SMQ_N);
5                  EXITLOOP;
4                  END;
4              IF .SJH_NP NEQ .SMQ_N THEN RELEASE_RECORD(.SJH_NP);
4              SJH_NP = .SJH_N;
4              SJH_P = .SJH;
4              SJH_N = .SJH[SYM$L_LINK];
3              END;
3          NEXT_ACTION = K_DEALLOCATE;
2          END;
2
2
2      [SRQ$K_ABORT_JOB]:
3          BEGIN
3          LOCAL
3              SMQ_N,                          ! Record number of SMQ
3              SMQ:            REF BBLOCK,     ! Pointer to SMQ
3              SJH_N,                          ! Record number of SJH
3              SJH_NS,                         ! Successor of SJH
3              SJH:            REF BBLOCK;     ! Pointer to SJH
3
3
```

```
;  3          SMQ = READ_RECORD(SMQ_N = .SRQ[SRQ$L_P1]);
;  3          SJH_N = .SMQ[SMQ$L_CURRENT_LIST];
;  3          WHILE .SJH_N NEQ 0 DO
;  4              BEGIN
;  4              SJH = READ_RECORD(.SJH_N);
;  4              IF .SJH_N EQL .SRQ[SRQ$L_P2]
;  4              THEN
;  5                  BEGIN
;  5                  SJH[SJH$V_ABORTING] = FALSE;
;  5                  STATUS = ABORT_EXECUTION(
;  5                      .SMQ_N, .SMQ,
;  5                      .SJH_N, .SJH);
;  5                  REWRITE_RECORD(.SJH_N);
;  5                  EXITLOOP;
;  4                  END;
;  4              SJH_NS = .SJH[SYM$L_LINK];
;  4              RELEASE_RECORD(.SJH_N);
;  4              SJH_N = .SJH_NS;
;  3              END;
;  3          NEXT_ACTION = K_COMPLETE;
;  2          END;
;  2
;  2
;  2      [SRQ$K_START_QUEUE]:
;  3          BEGIN
;  3          LOCAL
;  3              SMQ_N,                                  ! Record number of SMQ
;  3              SMQ:                    REF BBLOCK;     ! Pointer to SMQ
;  3
;  3
;  3          SMQ = READ_RECORD(SMQ_N = .SRQ[SRQ$L_P1]);
;  3          STATUS = START_SYMBIONT_STREAM(.SMQ_N, .SMQ);
;  3          IF NOT .STATUS
;  3          THEN
;  4              BEGIN
;  4              SMQ[SMQ$V_STARTING] = FALSE;
;  4              SMQ[SMQ$V_STOPPED] = TRUE;
;  4              NEXT_ACTION = K_COMPLETE;
;  4              END
;  3          ELSE
;  4              BEGIN
;  4              SRQ[SRQ$L_FUNCTION_CODE] = SRQ$K_START_SYMBIONT;
;  4              SRQ[SRQ$V_STALLED] = TRUE;
;  4              NEXT_ACTION = K_REWRITE;
;  3              END;
;  3          REWRITE_RECORD(.SMQ_N);
;  2          END;
;  2
;  2
;  2      [SRQ$K_STOP_QUEUE]:
;  3          BEGIN
;  3          LOCAL
;  3              SMQ_N,                                  ! Record number of SMQ
;  3              SMQ:                    REF BBLOCK;     ! Pointer to SMQ
;  3
;  3
;  3          SMQ = READ_RECORD(SMQ_N = .SRQ[SRQ$L_P1]);
```

```
3          SMQ[SMQ$V_STOPPING] = FALSE;
3          STOP_SYMBIONT_STREAM(.SMQ_N, .SMQ);
3          REWRITE_RECORD(.SMQ_N);
3          NEXT_ACTION = K_COMPLETE;
2          END;
2
2
2      [SRQ$K_PAUSE_QUEUE]:
3          BEGIN
3          LOCAL
3              SMQ_N,                                  ! Record number of SMQ
3              SMQ:                REF BBLOCK;         ! Pointer to SMQ
3
3
3          SMQ = READ_RECORD(SMQ_N = .SRQ[SRQ$L_P1]);
3          SMQ[SMQ$V_PAUSING] = FALSE;
3          STATUS = PAUSE_EXECUTION(.SMQ_N, .SMQ);
3          IF NOT .STATUS THEN FIND_PENDING_JOBS(.SMQ_N, .SMQ);
3          REWRITE_RECORD(.SMQ_N);
3          NEXT_ACTION = K_COMPLETE;
2          END;
2
2
2      [SRQ$K_RESUME_QUEUE]:
3          BEGIN
3          LOCAL
3              SMQ_N,                                  ! Record number of SMQ
3              SMQ:                REF BBLOCK;         ! Pointer to SMQ
3
3
3          SMQ = READ_RECORD(SMQ_N = .SRQ[SRQ$L_P1]);
3          SMQ[SMQ$V_RESUMING] = FALSE;
3          STATUS = RESUME_EXECUTION(
3              .SMQ_N, .SMQ,
3              .SRQ[SRQ$L_P2], .SRQ[SRQ$L_P3], .SRQ[SRQ$L_P4],
3              CH$RCHAR(SRQ[SRQ$T_P5]), SRQ[SRQ$T_P5]+1);
3          FIND_PENDING_JOBS(.SMQ_N, .SMQ);
3          REWRITE_RECORD(.SMQ_N);
3          NEXT_ACTION = K_COMPLETE;
2          END;
2
2
2      [SRQ$K_RESET_QUEUE]:
3          BEGIN
3          LOCAL
3              SMQ_N,                                  ! Record number of SMQ
3              SMQ:                REF BBLOCK;         ! Pointer to SMQ
3
3
3          SMQ[SMQ$V_RESETTING] = FALSE;
3          SMQ = READ_RECORD(SMQ_N = .SRQ[SRQ$L_P1]);
3          RESET_EXECUTOR_QUEUE(.SMQ_N, .SMQ);
3          REWRITE_RECORD(.SMQ_N);
3          NEXT_ACTION = K_COMPLETE;
2          END;
2
2
```

```
;  627       1664  2       [SRQ$K_BROADCAST_MESSAGE]:
;  628       1665  3           BEGIN
;  629       1666  3           BROADCAST_MESSAGE(
;  630       1667  3               THIS_SYSID,
;  631       1668  3               SRQ[SRQ$T_BRDCST_USERNAME],
;  632       1669  3               .SRQ[SRQ$W_BRDCST_LENGTH],
;  633       1670  3               SRQ[SRQ$T_BRDCST_TEXT]);
;  634       1671  3           NEXT_ACTION = K_DEALLOCATE;
;  635       1672  2           END;
;  636       1673  2
;  637       1674  2
;  638       1675  2       [SRQ$K_RESPONSE]:
;  639       1676  3           BEGIN
;  640       1677  3           SEND_SERVICE_RESPONSE_MESSAGE(
;  641       1678  3               SRQ[SRQ$T_SRB],
;  642       1679  3               .SRQ[SRQ$L_P1]);
;  643       1680  3           NEXT_ACTION = K_DEALLOCATE;
;  644       1681  2           END;
;  645       1682  2
;  646       1683  2
;  647       1684  2       [SRQ$K_DELETE_FILES]:
;  648       1685  3           BEGIN
;  649       1686  3           DELETE_FILES(.SRQ[SRQ$L_P1]);
;  650       1687  3           NEXT_ACTION = K_DEALLOCATE;
;  651       1688  2           END;
;  652       1689  2
;  653       1690  2
;  654       1691  2       TES;
;  655       1692  2
;  656       1693  2
;  657       1694  2 .STATUS
;  658       1695  1 END;
; INFO#250              L1:1517
; Referenced LOCAL symbol SJH_P is probably not initialized
; INFO#250              L1:1656
; Referenced LOCAL symbol SMQ is probably not initialized



                                                 07FC 00000 PROCESS_REMOTE_SERVICES:
                                                                         .WORD    Save R2,R3,R4,R5,R6,R7,R8,R9,R10                 ; 1436
                             5A 00000000G  EF   9E 00002                 MOVAB    READ_RECORD, R10                                 ;
                             58            01   D0 00009                 MOVL     #1, STATUS                                       ; 1470
                             52      04    AC   D0 0000C                 MOVL     SRQ, R2                                          ; 1473
                0A           01      0C    A2   CF 00010                 CASEL    12(R2), #1, #10                                  ;
    0126        01FF         00D7        0019      00015 1$:             .WORD    2$-1$,-                                          ;
    01DE        01A3         0180        0166      0001D                          12$-1$,-                                         ;
                022B         021C        0203      00025                          28$-1$,-                                         ;
                                                                                  17$-1$,-                                         ;
                                                                                  20$-1$,-                                         ;
                                                                                  21$-1$,-                                         ;
                                                                                  22$-1$,-                                         ;
                                                                                  25$-1$,-                                         ;
                                                                                  29$-1$,-                                         ;
                                                                                  30$-1$,-                                         ;
```

```
                                                                       31$-1$                                   ;
                                 01E6   31 0002B           BRW         28$                                      ; 1478
          56          20           A2   D0 0002E  2$:      MOVL        32(R2), SJH_NP                           ; 1492
          57                       56   D0 00032           MOVL        SJH_NP, SMQ_N                            ;
                                   56   DD 00035           PUSHL       SJH_NP                                   ;
          6A                       01   FB 00037           CALLS       #1, READ_RECORD                          ;
          53                       50   D0 0003A           MOVL        R0, SMQ                                  ;
          55          48           A3   D0 0003D           MOVL        72(SMQ), SJH_N                           ; 1493
                                   03   12 00041  3$:      BNEQ        4$                                       ; 1494
                                 0204   31 00043           BRW         32$                                      ;
                                   55   DD 00046  4$:      PUSHL       SJH_N                                    ; 1496
          6A                       01   FB 00048           CALLS       #1, READ_RECORD                          ;
          54                       50   D0 0004B           MOVL        R0, SJH                                  ;
     24   A2                       55   D1 0004E           CMPL        SJH_N, 36(R2)                            ; 1497
                                   7E   12 00052           BNEQ        10$                                      ;
     11   A4                       10   8A 00054           BICB2       #16, 17(SJH)                             ; 1500
                                   54   DD 00058           PUSHL       SJH                                      ; 1503
                                   28   BB 0005A           PUSHR       #^M<R3,R5>                               ; 1502
                                   57   DD 0005C           PUSHL       SMQ_N                                    ;
00000000G EF                       04   FB 0005E           CALLS       #4, START_EXECUTION                      ;
          58                       50   D0 00065           MOVL        R0, STATUS                               ;
          52                       58   E8 00068           BLBS        STATUS, 8$                               ; 1504
                                   54   DD 0006B           PUSHL       SJH                                      ; 1507
                                   55   DD 0006D           PUSHL       SJH_N                                    ;
00000000G EF                       02   FB 0006F           CALLS       #2, UPDATE_GETQUI_DATA                   ;
                    0115           C3   97 00076           DECB        277(SMQ)                                 ; 1508
          57                       56   D1 0007A           CMPL        SJH_NP, SMQ_N                            ; 1509
                                   0B   12 0007D           BNEQ        5$                                       ;
     48   A3                       64   D0 0007F           MOVL        (SJH), 72(SMQ)                           ; 1512
                                   17   12 00083           BNEQ        7$                                       ; 1513
                         4C        A3   D4 00085           CLRL        76(SMQ)                                  ;
                                   12   11 00088           BRB         7$                                       ; 1509
          69                       64   D0 0008A  5$:      MOVL        (SJH), (SJH_P)                           ; 1517
                                   04   12 0008D           BNEQ        6$                                       ; 1518
     4C   A3                       56   D0 0008F           MOVL        SJH_NP, 76(SMQ)                          ;
                                   56   DD 00093  6$:      PUSHL       SJH_NP                                   ; 1519
00000000G EF                       01   FB 00095           CALLS       #1, REWRITE_RECORD                       ;
   00DC   C4                       58   D0 0009C  7$:      MOVL        STATUS, 220(SJH)                         ; 1521
                                   7E   D4 000A1           CLRL        -(SP)                                    ; 1522
                                   53   DD 000A3           PUSHL       SMQ                                      ;
                                   54   DD 000A5           PUSHL       SJH                                      ;
                                   55   DD 000A7           PUSHL       SJH_N                                    ;
00000000G EF                       04   FB 000A9           CALLS       #4, COMPLETE_JOB                         ;
                                   53   DD 000B0           PUSHL       SMQ                                      ; 1523
                                   57   DD 000B2           PUSHL       SMQ_N                                    ;
00000000G EF                       02   FB 000B4           CALLS       #2, FIND_PENDING_JOBS                    ;
                                   09   11 000BB           BRB         9$                                       ; 1504
                                   55   DD 000BD  8$:      PUSHL       SJH_N                                    ; 1526
00000000G EF                       01   FB 000BF           CALLS       #1, REWRITE_RECORD                       ;
                                   57   DD 000C6  9$:      PUSHL       SMQ_N                                    ; 1528
00000000G EF                       01   FB 000C8           CALLS       #1, REWRITE_RECORD                       ;
                                 0178   31 000CF           BRW         32$                                      ; 1499
          57                       56   D1 000D2  10$:     CMPL        SJH_NP, SMQ_N                            ; 1531
                                   09   13 000D5           BEQL        11$                                      ;
                                   56   DD 000D7           PUSHL       SJH_NP                                   ;
00000000G EF                       01   FB 000D9           CALLS       #1, RELEASE_RECORD                       ;
          56                       55   D0 000E0  11$:     MOVL        SJH_N, SJH_NP                            ; 1532
```

```
                    59          54  D0 000E3         MOVL    SJH, SJH_P                               ; 1533
                    55          64  D0 000E6         MOVL    (SJH), SJH_N                             ; 1534
                              FF55  31 000E9         BRW     3$                                       ; 1494
                    57    20    A2  D0 000EC  12$:   MOVL    32(R2), SMQ_N                            ; 1550
                                57  DD 000F0         PUSHL   SMQ_N                                    ;
                    6A          01  FB 000F2         CALLS   #1, READ_RECORD                          ;
                    55          50  D0 000F5         MOVL    R0, SMQ                                  ;
                    54    48    A5  D0 000F8         MOVL    72(SMQ), SJH_N                           ; 1551
                                03  12 000FC  13$:   BNEQ    14$                                      ; 1552
                              0113  31 000FE         BRW     28$                                      ;
                                54  DD 00101  14$:   PUSHL   SJH_N                                    ; 1554
                    6A          01  FB 00103         CALLS   #1, READ_RECORD                          ;
                    53          50  D0 00106         MOVL    R0, SJH                                  ;
              24    A2          54  D1 00109         CMPL    SJH_N, 36(R2)                            ; 1555
                                1B  12 0010D         BNEQ    16$                                      ;
              10    A3          02  8A 0010F         BICB2   #2, 16(SJH)                              ; 1558
                                53  DD 00113         PUSHL   SJH                                      ; 1561
                                54  DD 00115         PUSHL   SJH_N                                    ;
                                55  DD 00117         PUSHL   SMQ                                      ; 1560
                                57  DD 00119         PUSHL   SMQ_N                                    ;
       00000000G    EF          04  FB 0011B         CALLS   #4, ABORT_EXECUTION                      ;
                    58          50  D0 00122         MOVL    R0, STATUS                               ;
                                54  DD 00125  15$:   PUSHL   SJH_N                                    ; 1562
                              00E3  31 00127         BRW     27$                                      ;
                    56          63  D0 0012A  16$:   MOVL    (SJH), SJH_NS                            ; 1565
                                54  DD 0012D         PUSHL   SJH_N                                    ; 1566
       00000000G    EF          01  FB 0012F         CALLS   #1, RELEASE_RECORD                       ;
                    54          56  D0 00136         MOVL    SJH_NS, SJH_N                            ; 1567
                                C1  11 00139         BRB     13$                                      ; 1552
                    54    20    A2  D0 0013B  17$:   MOVL    32(R2), SMQ_N                            ; 1580
                                54  DD 0013F         PUSHL   SMQ_N                                    ;
                    6A          01  FB 00141         CALLS   #1, READ_RECORD                          ;
                    53          50  D0 00144         MOVL    R0, SMQ                                  ;
                                53  DD 00147         PUSHL   SMQ                                      ; 1581
                                54  DD 00149         PUSHL   SMQ_N                                    ;
       00000000G    EF          02  FB 0014B         CALLS   #2, START_SYMBIONT_STREAM                ;
                    58          50  D0 00152         MOVL    R0, STATUS                               ;
                    0C          58  E8 00155         BLBS    STATUS, 18$                              ; 1582
              11    A3          01  8A 00158         BICB2   #1, 17(SMQ)                              ; 1585
              11    A3          02  88 0015C         BISB2   #2, 17(SMQ)                              ; 1586
                                5B  D4 00160         CLRL    NEXT_ACTION                              ; 1587
                                0B  11 00162         BRB     19$                                      ; 1582
              0C    A2          0C  D0 00164  18$:   MOVL    #12, 12(R2)                              ; 1591
              10    A2          02  88 00168         BISB2   #2, 16(R2)                               ; 1592
                    5B          03  D0 0016C         MOVL    #3, NEXT_ACTION                          ; 1593
                                54  DD 0016F  19$:   PUSHL   SMQ_N                                    ; 1595
       00000000G    EF          01  FB 00171         CALLS   #1, REWRITE_RECORD                       ;
                              00D2  31 00178         BRW     33$                                      ; 1473
                    53    20    A2  D0 0017B  20$:   MOVL    32(R2), SMQ_N                            ; 1606
                                53  DD 0017F         PUSHL   SMQ_N                                    ;
                    6A          01  FB 00181         CALLS   #1, READ_RECORD                          ;
              11    A0          04  8A 00184         BICB2   #4, 17(SMQ)                              ; 1607
                                50  DD 00188         PUSHL   SMQ                                      ; 1608
                                53  DD 0018A         PUSHL   SMQ_N                                    ;
       00000000G    EF          02  FB 0018C         CALLS   #2, STOP_SYMBIONT_STREAM                 ;
                                76  11 00193         BRB     26$                                      ; 1609
                    54    20    A2  D0 00195  21$:   MOVL    32(R2), SMQ_N                            ; 1621
```

```
                                       54  DD 00199          PUSHL   SMQ_N                                    :
                    6A                 01  FB 0019B          CALLS   #1, READ_RECORD                          :
                    53                 50  D0 0019E          MOVL    R0, SMQ                                  :
             10     A3                 08  8A 001A1          BICB2   #8, 16(SMQ)                              : 1622
                                       53  DD 001A5          PUSHL   SMQ                                      : 1623
                                       54  DD 001A7          PUSHL   SMQ_N                                    :
      00000000G     EF                 02  FB 001A9          CALLS   #2, PAUSE_EXECUTION                      :
                    58                 50  D0 001B0          MOVL    R0, STATUS                               :
                    2F                 58  E9 001B3          BLBC    STATUS, 23$                              : 1624
                                       38  11 001B6          BRB     24$                                      : 1625
                    54          20     A2  D0 001B8 22$:     MOVL    32(R2), SMQ_N                            : 1637
                                       54  DD 001BC          PUSHL   SMQ_N                                    :
                    6A                 01  FB 001BE          CALLS   #1, READ_RECORD                          :
                    53                 50  D0 001C1          MOVL    R0, SMQ                                  :
             10     A3          40     8F  8A 001C4          BICB2   #64, 16(SMQ)                             : 1638
                                       31  A2  9F 001C9      PUSHAB  49(R2)                                   : 1642
                    7E                 30  A2  9A 001CC      MOVZBL  48(R2), -(SP)                            :
                    7E                 28  A2  7D 001D0      MOVQ    40(R2), -(SP)                            :
                                       24  A2  DD 001D4      PUSHL   36(R2)                                   :
                                       53  DD 001D7          PUSHL   SMQ                                      :
                                       54  DD 001D9          PUSHL   SMQ_N                                    :
      00000000G     EF                 07  FB 001DB          CALLS   #7, RESUME_EXECUTION                     :
                    58                 50  D0 001E2          MOVL    R0, STATUS                               :
                                       53  DD 001E5 23$:     PUSHL   SMQ                                      : 1643
                                       54  DD 001E7          PUSHL   SMQ_N                                    :
      00000000G     EF                 02  FB 001E9          CALLS   #2, FIND_PENDING_JOBS                    :
                                     FF32  31 001F0 24$:     BRW     15$                                      : 1644
             10     A0                 20  8A 001F3 25$:     BICB2   #32, 16(SMQ)                             : 1656
                    53          20     A2  D0 001F7          MOVL    32(R2), SMQ_N                            : 1657
                                       53  DD 001FB          PUSHL   SMQ_N                                    :
                    6A                 01  FB 001FD          CALLS   #1, READ_RECORD                          :
                                       50  DD 00200          PUSHL   SMQ                                      : 1658
                                       53  DD 00202          PUSHL   SMQ_N                                    :
      00000000G     EF                 02  FB 00204          CALLS   #2, RESET_EXECUTOR_QUEUE                 :
                                       53  DD 0020B 26$:     PUSHL   SMQ_N                                    : 1659
      00000000G     EF                 01  FB 0020D 27$:     CALLS   #1, REWRITE_RECORD                       :
                                       5B  D4 00214 28$:     CLRL    NEXT_ACTION                              : 1660
                                       35  11 00216          BRB     33$                                      : 1473
                                42     A2  9F 00218 29$:     PUSHAB  66(R2)                                   : 1670
                    7E          40     A2  3C 0021B          MOVZWL  64(R2), -(SP)                            :
                                20     A2  9F 0021F          PUSHAB  32(R2)                                   : 1668
                         00000000'     EF  9F 00222          PUSHAB  THIS_SYSID                               : 1666
      00000000G     EF                 04  FB 00228          CALLS   #4, BROADCAST_MESSAGE                    : 1670
                                       19  11 0022F          BRB     32$                                      : 1671
                                20     A2  DD 00231 30$:     PUSHL   32(R2)                                   : 1679
                                70     A2  9F 00234          PUSHAB  112(R2)                                  : 1678
      00000000G     EF                 02  FB 00237          CALLS   #2, SEND_SERVICE_RESPONSE_MESSAGE        :
                                       0A  11 0023E          BRB     32$                                      : 1680
                                20     A2  DD 00240 31$:     PUSHL   32(R2)                                   : 1686
      00000000G     EF                 01  FB 00243          CALLS   #1, DELETE_FILES                         :
                    5B                 01  D0 0024A 32$:     MOVL    #1, NEXT_ACTION                          : 1687
                    50                 58  D0 0024D 33$:     MOVL    STATUS, R0                               : 1695
                                           04 00250          RET                                              :

; Routine Size:  593 bytes,    Routine Base:  CODE + 0195
```

```
1 GLOBAL ROUTINE SCAN_INCOMPLETE_SERVICES(EVENT,P1,P2,P3,P4): NOVALUE=
1
1 !++
1 !
1 ! FUNCTIONAL DESCRIPTION:
1 !       This routine scans the incomplete services list when a specified event
1 !       that allows an incomplete service to progress has occurred.
1 !
1 ! INPUT PARAMETERS:
1 !       EVENT           - Code identifying the event.
1 !       P1-P4           - Event-dependent parameters.
1 !
1 ! IMPLICIT INPUTS:
1 !       NONE
1 !
1 ! OUTPUT PARAMETERS:
1 !       NONE
1 !
1 ! IMPLICIT OUTPUTS:
1 !       NONE
1 !
1 ! ROUTINE VALUE:
1 !       NONE
1 !
1 ! SIDE EFFECTS:
1 !       NONE
1 !
1 !--
1
2 BEGIN
2 LOCAL
2       PRED_MODIFIED,                          ! True if predecessor modified
2       SRQ_NP,                                 ! Record number of predecessor of SRQ
2       SRQ_P:          REF BBLOCK,             ! Pointer to predecessor of SRQ
2       SRQ_N;                                  ! Record number of SRQ
2
2
2 ! Search the incomplete service list for those that are affected by the
2 ! specified event and process these.
2 !
2 PRED_MODIFIED = FALSE;
2 SRQ_P = READ_RECORD(SRQ_NP = SQH$K_RECNO);
2 SRQ_N = .SRQ_P[SQH$L_INCOMPLETE_SERVICE_LIST];
2 WHILE .SRQ_N NEQ 0 DO
3     BEGIN
3     LOCAL
3       SRQ:            REF BBLOCK,             ! Pointer to SRQ
3       SRQ_NS,                                 ! Record number of successor of SRQ
3       STATUS,                                 ! Request status
3       NEXT_ACTION;                            ! Code for next action
3
3
3     SRQ = READ_RECORD(.SRQ_N);
3     SRQ_NS = .SRQ[SYM$L_LINK];
3
3
3     ! Check for corrupted incomplete services list. If an incorrect record type
```

```
    3      ! is found, truncate the list. The remaining records are either already
    3      ! linked to another list, or they will be lost until a cold start operation
    3      ! is performed. Pruning these unwanted records (most likely free list or
    3      ! job header records) from the incomplete services list will prevent
    3      ! reading them every time SCAN_INCOMPLETE_SERVICES is called.
    3      !
    3      IF .SRQ[SYM$B_TYPE] NEQ SYM$K_SRQ
    3      THEN
    4          BEGIN
    4          DIAG_TRACE[12] = .DIAG_TRACE[12] + 1;
    4          DIAG_TRACE[13] = .SRQ[SYM$B_TYPE] * 65536 + .SRQ_N;
    4          IF .FLAGS[FLAGS_V_LOG_QF_REPAIR]
    4              THEN SIGNAL(JBC$_DIAGNOSTIC OR STS$K_INFO, 1,
    4                  $DESCRIPTOR('on-line repair of incomplete services list') );
    4          IF .SRQ_NP EQL SQH$K_RECNO
    4              THEN SRQ_P[SQH$L_INCOMPLETE_SERVICE_LIST] = 0
    4              ELSE SRQ_P[SYM$L_LINK] = 0;
    4          PRED_MODIFIED = TRUE;
    4          EXITLOOP;
    3          END;
    3
    3
    3      STATUS = SS$_NORMAL;
    3      NEXT_ACTION = K_RELEASE;
    3
    3
    3      CASE .EVENT FROM ISRV_K_REMOTE TO ISRV_K_PURGE_SJH OF
    3          SET
    3
    3
    3          [ISRV_K_REMOTE]:
    4              BEGIN
    5              IF SYSID_EQL(THIS_SYSID, SRQ[SRQ$T_RECEIVING_SYSID])
    4              AND NOT .SRQ[SRQ$V_STALLED]
    4              THEN
    4                  STATUS = PROCESS_REMOTE_SERVICES(.SRQ; NEXT_ACTION);
    3              END;
    3
    3
    3          [ISRV_K_SYNCHRONIZE]:
    4              BEGIN
    4              BIND
    4                  SJH_N           = P1,                         ! Record number of SJH
    4                  STS             = P2;                         ! Completion status
    4
    4              IF .SRQ[SRQ$L_FUNCTION_CODE] EQL SRQ$K_SYNCHRONIZE_JOB
    4              AND .SRQ[SRQ$L_P1] EQL .SJH_N
    4              THEN
    5                  BEGIN
    5                  NEXT_ACTION = K_COMPLETE;
    5                  STATUS = .STS;
    4                  END;
    3              END;
    3
    3
    3          [ISRV_K_SYMBIONT]:
    4              BEGIN
```

```
  4            BIND
  4                SMQ_N           = P1,                   ! Record number of SMQ
  4                SMQ             = P2,                   ! Pointer to SMQ
  4                FUNC            = P3,                   ! Function completed
  4                STS             = P4;                   ! Completion status
  4
  4            IF .SRQ[SRQ$L_FUNCTION_CODE] EQL SRQ$K_START_SYMBIONT
  4            AND .SRQ[SRQ$L_P1] EQL .SMQ_N
  5            AND (.FUNC EQL 0 OR .FUNC EQL .SRQ[SRQ$L_FUNCTION_CODE])
  4            THEN
  5                BEGIN
  5                NEXT_ACTION = K_COMPLETE;
  5                STATUS = .STS;
  4                END;
  3            END;
  3
  3
  3        [ISRV_K_PURGE_SYSID]:
  4            BEGIN
  4            BIND
  4                SYSID           = P1;                   ! Pointer to system ID
  4
  5            IF SYSID_EQL(.SYSID, SRQ[SRQ$T_SENDING_SYSID])
  4            THEN
  4                NEXT_ACTION = K_DEALLOCATE
  4
  5            ELSE IF SYSID_EQL(.SYSID, SRQ[SRQ$T_RECEIVING_SYSID])
  4            THEN
  5                BEGIN
  5                STATUS = JBC$_SYSFAIL OR STS$K_ERROR;
  5                NEXT_ACTION = K_COMPLETE;
  4                END;
  3            END;
  3
  3
  3        [ISRV_K_PURGE_SMQ]:
  4            BEGIN
  4            BIND
  4                SMQ_N           = P1;                   ! Record number of SMQ
  4
  4            IF
P 4                ONEOF (.SRQ[SRQ$L_FUNCTION_CODE], BMSK_(
P 4                    SRQ$K_START_QUEUE,
P 4                    SRQ$K_STOP_QUEUE,
P 4                    SRQ$K_PAUSE_QUEUE,
P 4                    SRQ$K_RESUME_QUEUE,
P 4                    SRQ$K_RESET_QUEUE,
  5                    SRQ$K_START_SYMBIONT))
  4                AND .SRQ[SRQ$L_P1] EQL .SMQ_N
  4            THEN
  4                NEXT_ACTION = K_COMPLETE;
  3            END;
  3
  3
  3        [ISRV_K_PURGE_SJH]:
  4            BEGIN
  4            BIND
```

```
            SJH_N           = P1;                        ! Record number of SJH

        IF
            ONEOF (.SRQ[SRQ$L_FUNCTION_CODE], BMSK_(
                SRQ$K_START_JOB,
                SRQ$K_ABORT_JOB))
            AND .SRQ[SRQ$L_P2] EQL .SJH_N
        THEN
            NEXT_ACTION = K_COMPLETE;
        END;


    TES;


IF .NEXT_ACTION EQL K_COMPLETE
THEN
    BEGIN

    ! If no response is required, merely deallocate the SRQ.
    !
    IF .SRQ[SRQ$V_NO_RESPONSE]
    THEN
        NEXT_ACTION = K_DEALLOCATE


    ! If the response can be sent locally, send it and deallocate the SRQ.
    !
    ELSE IF SYSID_EQL(THIS_SYSID, SRQ[SRQ$T_SENDING_SYSID])
    THEN
        BEGIN
        SEND_SERVICE_RESPONSE_MESSAGE(SRQ[SRQ$T_SRB], .STATUS);
        NEXT_ACTION = K_DEALLOCATE;
        END


    ! Otherwise, convert the SRQ to a "response" request and forward it
    ! to the sending job controller.
    !
    ELSE
        BEGIN
        COPY_SYSID(SRQ[SRQ$T_SENDING_SYSID], SRQ[SRQ$T_RECEIVING_SYSID]);
        COPY_SYSID(THIS_SYSID, SRQ[SRQ$T_SENDING_SYSID]);
        SRQ[SRQ$L_FUNCTION_CODE] = SRQ$K_RESPONSE;
        SRQ[SRQ$L_P1] = .STATUS;
        SRQ[SRQ$V_STALLED] = FALSE;
        ENTER_REMOTE_REQUEST(SRQ[SRQ$T_RECEIVING_SYSID]);
        NEXT_ACTION = K_REWRITE;
        END;
    END;


CASE .NEXT_ACTION FROM K_DEALLOCATE TO K_REWRITE OF
    SET


    [K_DEALLOCATE]:
```

```
;  888      1924  4                 BEGIN
;  889      1925  4                 IF .SRQ_NP EQL SQH$K_RECNO
;  890      1926  4                     THEN SRQ_P[SQH$L_INCOMPLETE_SERVICE_LIST] = .SRQ_NS
;  891      1927  4                     ELSE SRQ_P[SYM$L_LINK] = .SRQ_NS;
;  892      1928  4
;  893      1929  4                 ! First, rewrite the predecessor, then deallocate the SRQ.
;  894      1930  4                 ! If done in the opposite order, a crash after the deallocate
;  895      1931  4                 ! can result in a corrupted INCOMPLETE_SERVICE_LIST, which
;  896      1932  4                 ! will then result in a queue format error on warm/cold start.
;  897      1933  4                 !
;  898      1934  4                 FLUSH_RECORD(.SRQ_MP);
;  899      1935  4                 DEALLOCATE_RECORD(.SRQ_N);
;  900      1936  3                 END;
;  901      1937  3
;  902      1938  3
;  903      1939  3             [K_RELEASE]:
;  904      1940  4                 BEGIN
;  905      1941  4                 IF TESTBITSC(PRED_MODIFIED)
;  906      1942  4                     THEN REWRITE_RECORD(.SRQ_NP)
;  907      1943  4                     ELSE RELEASE_RECORD(.SRQ_NP);
;  908      1944  4                 SRQ_NP = .SRQ_N;
;  909      1945  4                 SRQ_P = .SRQ;
;  910      1946  3                 END;
;  911      1947  3
;  912      1948  3
;  913      1949  3             [K_REWRITE]:
;  914      1950  4                 BEGIN
;  915      1951  4                 IF TESTBITSS(PRED_MODIFIED)
;  916      1952  4                     THEN REWRITE_RECORD(.SRQ_NP)
;  917      1953  4                     ELSE RELEASE_RECORD(.SRQ_NP);
;  918      1954  4                 SRQ_NP = .SRQ_N;
;  919      1955  4                 SRQ_P = .SRQ;
;  920      1956  3                 END;
;  921      1957  3
;  922      1958  3
;  923      1959  3             TES;
;  924      1960  3
;  925      1961  3
;  926      1962  3         SRQ_N = .SRQ_NS;
;  927      1963  2         END;
;  928      1964  2
;  929      1965  2
;  930      1966  2 IF .PRED_MODIFIED
;  931      1967  2     THEN REWRITE_RECORD(.SRQ_NP)
;  932      1968  2     ELSE RELEASE_RECORD(.SRQ_NP);
;  933      1969  1 END;


20 72 69 61 70 65 72 20 65 6E 69 6C 2D 6E 6F  003E6 P.AAB:  .ASCII  \on-line repair of incomplete services li\  ;
73 20 65 74 65 6C 70 6D 6F 63 6E 69 20 66 6F  003F5                                                             ;
            69 6C 20 73 65 63 69 76 72 65  00404                                                             ;
                                       74 73  0040E          .ASCII  \st\                                      ;
                                   0000002A  00410 P.AAA:  .LONG   42                                          ;
                                   00000000' 00414          .ADDRESS P.AAB                                     ;
```

```
                                                      0FFC 00000      .ENTRY   SCAN_INCOMPLETE_SERVICES, Save R2,R3,R4,R5,-; 1696
                                                                               R6,R7,R8,R9,R10,R11                        ;
                                    5A 00000000G   EF 9E 00002      MOVAB    REWRITE_RECORD, R10                        ;
                                    59 00000000'   EF 9E 00009      MOVAB    THIS_SYSID, R9                             ;
                                                   57 D4 00010      CLRL     PRED_MODIFIED                              ; 1736
                                    55             01 D0 00012      MOVL     #1, SRQ_NP                                 ; 1737
                                                   01 DD 00015      PUSHL    #1                                         ;
                         00000000G  EF             01 FB 00017      CALLS    #1, READ_RECORD                            ;
                                    53             50 D0 0001E      MOVL     R0, SRQ_P                                  ;
                                    56         44  A3 D0 00021      MOVL     68(SRQ_P), SRQ_N                           ; 1738
                                                   4D 13 00025 1$:  BEQL     5$                                         ; 1739
                                                   56 DD 00027      PUSHL    SRQ_N                                      ; 1748
                         00000000G  EF             01 FB 00029      CALLS    #1, READ_RECORD                            ;
                                    52             50 D0 00030      MOVL     R0, SRQ                                    ;
                                    58             62 D0 00033      MOVL     (SRQ), SRQ_NS                              ; 1749
                                    09         04  A2 91 00036      CMPB     4(SRQ), #9                                 ; 1759
                                                   3B 13 0003A      BEQL     6$                                         ;
                                             FE28  C9 D6 0003C      INCL     DIAG_TRACE+48                              ; 1762
                                    50         04  A2 9A 00040      MOVZBL   4(SRQ), R0                                 ; 1763
                   50               50             10 78 00044      ASHL     #16, R0, R0                                ;
             FE2C  C9               50             56 C1 00048      ADDL3    SRQ_N, R0, DIAG_TRACE+52                   ;
                   12          FA   A9             05 E1 0004E      BBC      #5, FLAGS+2, 2$                            ; 1764
                                               A2  AF 9F 00053      PUSHAB   P.AAA                                      ; 1766
                                                   01 DD 00056      PUSHL    #1                                         ; 1765
                                         000484B3  8F DD 00058      PUSHL    #296115                                    ;
                         00000000G  00             03 FB 0005E      CALLS    #3, LIB$SIGNAL                             ;
                                    01             55 D1 00065 2$:  CMPL     SRQ_NP, #1                                 ; 1767
                                                   05 12 00068      BNEQ     3$                                         ;
                                               44  A3 D4 0006A      CLRL     68(SRQ_P)                                  ; 1768
                                                   02 11 0006D      BRB      4$                                         ;
                                                   63 D4 0006F 3$:  CLRL     (SRQ_P)                                    ; 1769
                                    57             01 D0 00071 4$:  MOVL     #1, PRED_MODIFIED                          ; 1770
                                                 015F 31 00074 5$:  BRW      34$                                        ; 1761
                                    54             01 D0 00077 6$:  MOVL     #1, STATUS                                 ; 1775
                                    5B             02 D0 0007A      MOVL     #2, NEXT_ACTION                            ; 1776
                   05               00         04  AC CF 0007D      CASEL    EVENT, #0, #5                              ; 1779
      0060       003F             002A           000C    00082 7$:  .WORD    8$-7$,-                                    ;
                                  009E           008C    0008A               9$-7$,-
                                                                             10$-7$,-
                                                                             12$-7$,-
                                                                             16$-7$,-
                                                                             17$-7$
                               1A   A2             69 D1 0008E 8$:  CMPL     THIS_SYSID, 26(SRQ)                        ; 1785
                                                   6F 12 00092      BNEQ     15$                                        ;
                               1E   A2         04  A9 B1 00094      CMPW     THIS_SYSID+4, 30(SRQ)                      ;
                                                   68 12 00099      BNEQ     15$                                        ;
                   56          10   A2             01 E0 0009B      BBS      #1, 16(SRQ), 13$                           ; 1786
                                                   52 DD 000A0      PUSHL    SRQ                                        ; 1788
                             FCD6   CF             01 FB 000A2      CALLS    #1, PROCESS_REMOTE_SERVICES                ;
                                    54             50 D0 000A7      MOVL     R0, STATUS                                 ;
                                                   4A 11 000AA      BRB      13$                                        ; 1779
                               03              0C  A2 D1 000AC 9$:  CMPL     12(SRQ), #3                                ; 1798
                                                   7E 12 000B0      BNEQ     18$                                        ;
                               08   AC         20  A2 D1 000B2      CMPL     32(SRQ), SJH_N                             ; 1799
                                                   7B 12 000B7      BNEQ     20$                                        ;
                                                   5B D4 000B9      CLRL     NEXT_ACTION                                ; 1802
```

```
ASYNCHRON       Asynchronous service management                D 6
V04-002                                                   15-Sep-1984 23:49:14    VAX-11 Bliss-32 V4.0-742              Page  30
                                                          14-Sep-1984 22:32:32    [JOBCTL.SRC]ASYNCHRON.B32;3                (5)

                    54          0C      AC  D0 000BB         MOVL    STS, STATUS                                    ; 1803
                                        73  11 000BF         BRB     20$                                            ; 1779
                    0C          0C      A2  D1 000C1 10$:    CMPL    12(SRQ), #12                                   ; 1816
                                        6D  12 000C5         BNEQ    20$                                            ;
              08    AC          20      A2  D1 000C7         CMPL    32(SRQ), SMQ_N                                 ; 1817
                                        66  12 000CC         BNEQ    20$                                            ;
                                10      AC  D5 000CE         TSTL    FUNC                                           ; 1818
                                        07  13 000D1         BEQL    11$                                            ;
              0C    A2          10      AC  D1 000D3         CMPL    FUNC, 12(SRQ)                                  ;
                                        5A  12 000D8         BNEQ    20$                                            ;
                                        5B  D4 000DA 11$:    CLRL    NEXT_ACTION                                    ; 1821
                    54          14      AC  D0 000DC         MOVL    STS, STATUS                                    ; 1822
                                        52  11 000E0         BRB     20$                                            ; 1779
                    50          08      AC  D0 000E2 12$:    MOVL    SYSID, R0                                      ; 1832
              14    A2                  60  D1 000E6         CMPL    (R0), 20(SRQ)                                  ;
                                        0C  12 000EA         BNEQ    14$                                            ;
              18    A2          04      A0  B1 000EC         CMPW    4(R0), 24(SRQ)                                 ;
                                        05  12 000F1         BNEQ    14$                                            ;
                    5B                  01  D0 000F3         MOVL    #1, NEXT_ACTION                                ; 1834
                                        3C  11 000F6 13$:    BRB     20$                                            ;
              1A    A2                  60  D1 000F8 14$:    CMPL    (R0), 26(SRQ)                                  ; 1836
                                        36  12 000FC         BNEQ    20$                                            ;
              1E    A2          04      A0  B1 000FE         CMPW    4(R0), 30(SRQ)                                 ;
                                        2F  12 00103 15$:    BNEQ    20$                                            ;
                    54    000480F2      8F  D0 00105         MOVL    #295154, STATUS                                ; 1839
                                        24  11 0010C         BRB     19$                                            ; 1840
     50 0F880000    8F          0C      A2  78 0010E 16$:    ASHL    12(SRQ), #260571136, R0                        ; 1857
                                        1B  18 00117         BGEQ    20$                                            ;
              08    AC          20      A2  D1 00119         CMPL    32(SRQ), SMQ_N                                 ; 1858
                                        10  11 0011E         BRB     18$                                            ;
     50 60000000    8F          0C      A2  78 00120 17$:    ASHL    12(SRQ), #1610612736, R0                       ; 1872
                                        09  18 00129         BGEQ    20$                                            ;
              08    AC          24      A2  D1 0012B         CMPL    36(SRQ), SJH_N                                 ; 1873
                                        02  12 00130 18$:    BNEQ    20$                                            ;
                                        5B  D4 00132 19$:    CLRL    NEXT_ACTION                                    ; 1875
                                        5B  D5 00134 20$:    TSTL    NEXT_ACTION                                    ; 1882
                                        4C  12 00136         BNEQ    23$                                            ;
                    19          10      A2  E8 00138         BLBS    16(SRQ), 21$                                   ; 1888
              14    A2                  69  D1 0013C         CMPL    THIS_SYSID, 20(SRQ)                            ; 1895
                                        18  12 00140         BNEQ    22$                                            ;
              18    A2          04      A9  B1 00142         CMPW    THIS_SYSID+4, 24(SRQ)                          ;
                                        11  12 00147         BNEQ    22$                                            ;
                                        54  DD 00149         PUSHL   STATUS                                         ; 1898
                                70      A2  9F 0014B         PUSHAB  112(SRQ)                                       ;
        00000000G   EF                  02  FB 0014E         CALLS   #2, SEND_SERVICE_RESPONSE_MESSAGE              ;
                    5B                  01  D0 00155 21$:    MOVL    #1, NEXT_ACTION                                ; 1899
                                        2A  11 00158         BRB     23$                                            ; 1895
              1A    A2          14      A2  D0 0015A 22$:    MOVL    20(SRQ), 26(SRQ)                               ; 1908
              1E    A2          18      A2  B0 0015F         MOVW    24(SRQ), 30(SRQ)                               ;
              14    A2                  69  D0 00164         MOVL    THIS_SYSID, 20(SRQ)                            ; 1909
              18    A2          04      A9  B0 00168         MOVW    THIS_SYSID+4, 24(SRQ)                          ;
              0C    A2                  0A  D0 0016D         MOVL    #10, 12(SRQ)                                   ; 1910
              20    A2                  54  D0 00171         MOVL    STATUS, 32(SRQ)                                ; 1911
              10    A2                  02  8A 00175         BICB2   #2, 16(SRQ)                                    ; 1912
                                1A      A2  9F 00179         PUSHAB  26(SRQ)                                        ; 1913
           0000V    CF                  01  FB 0017C         CALLS   #1, ENTER_REMOTE_REQUEST                       ;
                    5B                  03  D0 00181         MOVL    #3, NEXT_ACTION                                ; 1914
```

```
             02             01              5B  CF 00184 23$:   CASEL   NEXT_ACTION, #1, #2                             ; 1919
           002E           0028            0006     00188 24$:   .WORD   25$-24$,-                                       ;
                                                                        28$-24$,-                                       ;
                                                                        29$-24$                                         ;
                            01              55  D1 0018E 25$:   CMPL    SRQ_NP, #1                                      ; 1925
                                            06  12 00191        BNEQ    26$                                             ;
                     44     A3              58  D0 00193        MOVL    SRQ_NS, 68(SRQ_P)                               ; 1926
                                            03  11 00197        BRB     27$                                             ;
                            63              58  D0 00199 26$:   MOVL    SRQ_NS, (SRQ_P)                                 ; 1927
                                            55  DD 0019C 27$:   PUSHL   SRQ_NP                                          ; 1934
              00000000G     EF              01  FB 0019E        CALLS   #1, FLUSH_RECORD                                ;
                                            56  DD 001A5        PUSHL   SRQ_N                                           ; 1935
              00000000G     EF              01  FB 001A7        CALLS   #1, DEALLOCATE_RECORD                           ;
                                            20  11 001AE        BRB     33$                                             ; 1919
             0D             57              00  E5 001B0 28$:   BBCC    #0, PRED_MODIFIED, 31$                          ; 1941
                                            04  11 001B4        BRB     30$                                             ; 1942
             07             57              00  E3 001B6 29$:   BBCS    #0, PRED_MODIFIED, 31$                          ; 1951
                                            55  DD 001BA 30$:   PUSHL   SRQ_NP                                          ; 1952
                            6A              01  FB 001BC        CALLS   #1, REWRITE_RECORD                              ;
                                            09  11 001BF        BRB     32$                                             ;
                                            55  DD 001C1 31$:   PUSHL   SRQ_NP                                          ; 1953
              00000000G     EF              01  FB 001C3        CALLS   #1, RELEASE_RECORD                              ;
                            55              56  D0 001CA 32$:   MOVL    SRQ_N, SRQ_NP                                   ; 1954
                            53              52  D0 001CD        MOVL    SRQ, SRQ_P                                      ; 1955
                            56              58  D0 001D0 33$:   MOVL    SRQ_NS, SRQ_N                                   ; 1962
                                          FE4F  31 001D3        BRW     1$                                              ; 1739
                            06              57  E9 001D6 34$:   BLBC    PRED_MODIFIED, 35$                              ; 1966
                                            55  DD 001D9        PUSHL   SRQ_NP                                          ; 1967
                            6A              01  FB 001DB        CALLS   #1, REWRITE_RECORD                              ;
                                                04 001DE        RET                                                     ;
                                            55  DD 001DF 35$:   PUSHL   SRQ_NP                                          ; 1968
              00000000G     EF              01  FB 001E1        CALLS   #1, RELEASE_RECORD                              ;
                                                04 001E8        RET                                                     ; 1969

; Routine Size:  489 bytes,    Routine Base:  CODE + 0418
```

```
  1 GLOBAL ROUTINE REMOTE_BLOCKING_AST: NOVALUE=
  1
  1 !++
  1 !
  1 ! FUNCTIONAL DESCRIPTION:
  1 !       This routine is the blocking AST routine for the job controller remote
  1 !       request lock.  This routine is entered when another job controller
  1 !       attempts to obtain this job controller's remote request lock.
  1 !
  1 ! INPUT PARAMETERS:
  1 !       Standard AST routine parameters (not used).
  1 !
  1 ! IMPLICIT INPUTS:
  1 !       NONE
  1 !
  1 ! OUTPUT PARAMETERS:
  1 !       NONE
  1 !
  1 ! IMPLICIT OUTPUTS:
  1 !       NONE
  1 !
  1 ! ROUTINE VALUE:
  1 !       NONE
  1 !
  1 ! SIDE EFFECTS:
  1 !       NONE
  1 !
  1 !--
  1
  2 BEGIN
  2 LOCAL
  2         STATUS_1,                       ! Status return
  2         STATUS_2;                       ! Status return
  2
  2
  2 ! Convert the lock to null mode to allow the process that has requested the
  2 ! lock to obtain it.
  2 !
P 2 STATUS_1 = $ENQW(
P 2     EFN=JBC$K_SYNC_EFN,
P 2     LKMODE=LCK$K_NLMODE,
P 2     LKSB=REMOTE_REQUEST_LKSB,
  2     FLAGS=LCK$M_CONVERT);
  2 IF .STATUS_1 THEN STATUS_1 = .REMOTE_REQUEST_LKSB[0];
  2 IF NOT .STATUS_1
  2 THEN
  2     SIGNAL(JBC$_COMREMJBC OR STS$K_ERROR, 0, .STATUS_1);
  2
  2
  2 ! Reconvert the lock to exclusive mode to reenable the blocking AST.
  2 !
P 2 STATUS_2 = $ENQ(
P 2     LKMODE=LCK$K_EXMODE,
P 2     LKSB=REMOTE_REQUEST_LKSB,
P 2     FLAGS=LCK$M_CONVERT OR LCK$M_NODLCKBLK,
P 2     ASTADR=REMOTE_COMPLETION_AST,
  2     BLKAST=REMOTE_BLOCKING_AST);
```

```
;   992          2027   2 IF NOT .STATUS_2
;   993          2028   2 THEN
;   994          2029   2      SIGNAL(JBC$_COMREMJBC OR STS$K_ERROR, 0, .STATUS_2);
;   995          2030   1 END;



                                                              .EXTRN  SYS$ENQW, SYS$ENQ

                                          000C 00000          .ENTRY  REMOTE_BLOCKING_AST, Save R2,R3                   ; 1970
                   53 00000000G   00   9E 00002          MOVAB   LIB$SIGNAL, R3                                        ;
                   52 00000000'   EF   9E 00009          MOVAB   REMOTE_REQUEST_LKSB, R2                               ;
                                  7E   7C 00010          CLRQ    -(SP)                                                 ; 2012
                                  7E   7C 00012          CLRQ    -(SP)                                                 ;
                                  7E   7C 00014          CLRQ    -(SP)                                                 ;
                   7E             02   7D 00016          MOVQ    #2, -(SP)                                             ;
                                  52   DD 00019          PUSHL   R2                                                    ;
                   7E             01   7D 0001B          MOVQ    #1, -(SP)                                             ;
            00000000G   00        0B   FB 0001E          CALLS   #11, SYS$ENQW                                         ;
                   06             50   E9 00025          BLBC    STATUS_1, 1$                                          ; 2013
                   50             62   3C 00028          MOVZWL  REMOTE_REQUEST_LKSB, STATUS_1                         ;
                   0D             50   E8 0002B          BLBS    STATUS_1, 2$                                          ; 2014
                                  50   DD 0002E 1$:      PUSHL   STATUS_1                                              ; 2016
                                  7E   D4 00030          CLRL    -(SP)                                                 ;
                     00048412     8F   DD 00032          PUSHL   #295954                                               ;
                   63             03   FB 00038          CALLS   #3, LIB$SIGNAL                                        ;
                                  7E   7C 0003B 2$:      CLRQ    -(SP)                                                 ; 2026
                           C0     AF   9F 0003D          PUSHAB  REMOTE_BLOCKING_AST                                   ;
                                  7E   D4 00040          CLRL    -(SP)                                                 ;
                        0000V     CF   9F 00042          PUSHAB  REMOTE_COMPLETION_AST                                 ;
                                  7E   7C 00046          CLRQ    -(SP)                                                 ;
                   7E       0402  8F   3C 00048          MOVZWL  #1026, -(SP)                                          ;
                                  52   DD 0004D          PUSHL   R2                                                    ;
                                  05   DD 0004F          PUSHL   #5                                                    ;
                                  7E   D4 00051          CLRL    -(SP)                                                 ;
            00000000G   00        0B   FB 00053          CALLS   #11, SYS$ENQ                                          ;
                   0D             50   E8 0005A          BLBS    STATUS_2, 3$                                          ; 2027
                                  50   DD 0005D          PUSHL   STATUS_2                                              ; 2029
                                  7E   D4 0005F          CLRL    -(SP)                                                 ;
                     00048412     8F   DD 00061          PUSHL   #295954                                               ;
                   63             03   FB 00067          CALLS   #3, LIB$SIGNAL                                        ;
                                       04 0006A 3$:      RET                                                           ; 2030

; Routine Size:  107 bytes,    Routine Base:  CODE + 0601
```

```
1 ROUTINE REMOTE_COMPLETION_NONAST: NOVALUE=
1
1 !++
1 !
1 ! FUNCTIONAL DESCRIPTION:
1 !       This routine is scheduled to execute by the completion AST routine for
1 !       reconversion of the job controller remote request lock to exclusive
1 !       mode, which is entered when another job controller has obtained and
1 !       released this job controller's remote request lock.
1 !
1 ! INPUT PARAMETERS:
1 !       NONE
1 !
1 ! IMPLICIT INPUTS:
1 !       NONE
1 !
1 ! OUTPUT PARAMETERS:
1 !       NONE
1 !
1 ! IMPLICIT OUTPUTS:
1 !       NONE
1 !
1 ! ROUTINE VALUE:
1 !       NONE
1 !
1 ! SIDE EFFECTS:
1 !       NONE
1 !
1 !--
1
2 BEGIN
2
2 ! Get the current time.
2 !
2 $GETTIM(TIMADR=CUR_TIME);
2
2
2 IF .QUEUE_FAB[FAB$W_IFI] NEQ 0
2 THEN
3     BEGIN
3
3     ! Lock the queue file.
3     !
3     LOCK_QUEUE_FILE();
3
3
3     ! Search the incomplete services list to perform actions requested by the
3     ! remote job controller.
3     !
3     SCAN_INCOMPLETE_SERVICES(ISRV_K_REMOTE);
3
3
3     ! Unlock the queue file.
3     !
3     UNLOCK_QUEUE_FILE();
2     END;
1 END;
```

```
                                                                     .EXTRN  SYS$GETTIM

                                                0000 00000 REMOTE_COMPLETION_NONAST:
                                                                     .WORD   Save nothing                                  ; 2031
                                00000000'  EF   9F 00002             PUSHAB  CUR_TIME                                      ; 2065
                00000000G  00              01   FB 00008             CALLS   #1, SYS$GETTIM                                ;
                                00000000'  EF   B5 0000F             TSTW    QUEUE_FAB+2                                   ; 2068
                                           15   13 00015             BEQL    1$                                            ;
                00000000G  EF              00   FB 00017             CALLS   #0, LOCK_QUEUE_FILE                           ; 2074
                                           7E   D4 0001E             CLRL    -(SP)                                         ; 2080
                     FD87  CF              01   FB 00020             CALLS   #1, SCAN_INCOMPLETE_SERVICES                  ;
                00000000G  EF              00   FB 00025             CALLS   #0, UNLOCK_QUEUE_FILE                         ; 2085
                                                04 0002C 1$:         RET                                                   ; 2087

; Routine Size:  45 bytes,    Routine Base:  CODE + 066C
; 1055      2088  1 ROUTINE REMOTE_COMPLETION_AST: NOVALUE=
; 1056      2089  1
; 1057      2090  1 !++
; 1058      2091  1 !
; 1059      2092  1 ! FUNCTIONAL DESCRIPTION:
; 1060      2093  1 !       This routine is the completion AST routine for reconversion of the job
; 1061      2094  1 !       controller remote request lock to exclusive mode.  This routine is
; 1062      2095  1 !       entered when another job controller has obtained and released this job
; 1063      2096  1 !       controller's remote request lock.
; 1064      2097  1 !
; 1065      2098  1 ! INPUT PARAMETERS:
; 1066      2099  1 !       Standard AST routine parameters (not used).
; 1067      2100  1 !
; 1068      2101  1 ! IMPLICIT INPUTS:
; 1069      2102  1 !       NONE
; 1070      2103  1 !
; 1071      2104  1 ! OUTPUT PARAMETERS:
; 1072      2105  1 !       NONE
; 1073      2106  1 !
; 1074      2107  1 ! IMPLICIT OUTPUTS:
; 1075      2108  1 !       NONE
; 1076      2109  1 !
; 1077      2110  1 ! ROUTINE VALUE:
; 1078      2111  1 !       NONE
; 1079      2112  1 !
; 1080      2113  1 ! SIDE EFFECTS:
; 1081      2114  1 !       NONE
; 1082      2115  1 !
; 1083      2116  1 !--
; 1084      2117  1
; 1085      2118  2 BEGIN
; 1086      2119  2
; 1087      2120  2 ! Check status of the $ENQ.
; 1088      2121  2 !
; 1089      2122  2 IF NOT .REMOTE_REQUEST_LKSB[0]
; 1090      2123  2 THEN
; 1091      2124  2     SIGNAL(JBC$_COMREMJBC OR STS$K_ERROR, 0, .REMOTE_REQUEST_LKSB[0]);
; 1092      2125  2
; 1093      2126  2 !
; 1094      2127  2 ! Schedule the companion routine to execute.
; 1095      2128  2 !
; 1096      2129  2 SCHEDULE_NONAST(REMOTE_COMPLETION_NONAST);
; 1097      2130  1 END;


                                          0004 00000 REMOTE_COMPLETION_AST:
                                                                  .WORD   Save R2                                 ; 2088
                   52 00000000'  EF   9E 00002                    MOVAB   REMOTE_REQUEST_LKSB, R2
                   12            62   E8 00009                    BLBS    REMOTE_REQUEST_LKSB, 1$                 ; 2122
                   7E            62   3C 0000C                    MOVZWL  REMOTE_REQUEST_LKSB, -(SP)              ; 2124
                                 7E   D4 0000F                    CLRL    -(SP)                                   ;
                      00048412   8F   DD 00011                    PUSHL   #295954                                 ;
         00000000G  00           03   FB 00017                    CALLS   #3, LIB$SIGNAL                          ;
                            B2   AF   9F 0001E 1$:                PUSHAB  REMOTE_COMPLETION_NONAST                ; 2129
```

```
                    00000000G  EF           01  FB 00021        CALLS   #1, SCHEDULE_NONAST                ;
                                                04 00028        RET                                        ; 2130

; Routine Size:  41 bytes,    Routine Base:  CODE + 0699
```

```
  1 ROUTINE ENTER_REMOTE_REQUEST(SYSID): NOVALUE=
  1
  1 !++
  1 !
  1 ! FUNCTIONAL DESCRIPTION:
  1 !       This routine requests services of another job controller.
  1 !
  1 ! INPUT PARAMETERS:
  1 !       SYSID           - Address of the system ID of the target.
  1 !
  1 ! IMPLICIT INPUTS:
  1 !       NONE
  1 !
  1 ! OUTPUT PARAMETERS:
  1 !       NONE
  1 !
  1 ! IMPLICIT OUTPUTS:
  1 !       NONE
  1 !
  1 ! ROUTINE VALUE:
  1 !       NONE
  1 !
  1 ! SIDE EFFECTS:
  1 !       NONE
  1 !
  1 !--
  1
  2 BEGIN
  2 MAP
  2         SYSID:          REF BBLOCK;     ! Pointer to system ID
  2 LOCAL
  2         LKSB:           REF BBLOCK,     ! Pointer to LKSB from dynamic memory
  2         RESNAM_DESC:    VECTOR[2],      ! Descriptor for resource name
  2         RESNAM:         BBLOCK[10],     ! Buffer for resource name
  2         STATUS;                         ! Status return
  2
  2
  2 ! Allocate and initialize the LKSB.
  2 !
  2 LKSB = ALLOCATE_MEMORY();
  2
  2
  2 ! Initialize the resource name.
  2 !
  2 RESNAM[0,0,32,0] = 'JBC$';
  2 COPY_SYSID(.SYSID, RESNAM[4,0,0,0]);
  2 RESNAM_DESC[0] = %ALLOCATION(RESNAM);
  2 RESNAM_DESC[1] = RESNAM;
  2
  2
  2 ! Enqueue for the doorbell lock of the remote system.
  2 !
P 2 STATUS = $ENQ(
P 2     LKMODE=LCK$K_EXMODE,
P 2     LKSB=.LKSB,
P 2     RESNAM=RESNAM_DESC,
P 2     FLAGS=LCK$M_SYNCSTS OR LCK$M_NODLCKWT,
; 1156      P 2188  2           ASTADR=ENTER_REMOTE_REQUEST_AST,
; 1157        2189  2           ASTPRM=.LKSB);
; 1158        2190  2
; 1159        2191  2
; 1160        2192  2   ! Set flag is there is no doorbell lock defined for the remote job controller.
; 1161        2193  2   ! This indicates that either the remote node is not available (or not in the
; 1162        2194  2   ! cluster) or the remote job controller does not have the queue file open).
; 1163        2195  2   ! In either case the remote job controller may not respond for a long time or
; 1164        2196  2   ! possibly never (if an invalid node name were specified, for example).
; 1165        2197  2   !
; 1166        2198  2   ! Note that if SS$_SYNCH is set, the AST will not be delivered. Consequently,
; 1167        2199  2   ! lock dequeuing and memory deallocation must be performed here when the AST
; 1168        2200  2   ! routine is not executed.
; 1169        2201  2   !
; 1170        2202  2   FLAGS[FLAGS_V_NO_REMOTE_DOORBELL] = FALSE;
; 1171        2203  2   IF .STATUS EQL SS$_SYNCH
; 1172        2204  2   THEN
; 1173        2205  3       BEGIN
; 1174        2206  3       FLAGS[FLAGS_V_NO_REMOTE_DOORBELL] = TRUE;
; 1175        2207  3       $DEQ(LKID=.LKSB[4,0,32,0]);
; 1176        2208  3       DEALLOCATE_MEMORY(.LKSB);
; 1177        2209  2       END;
; 1178        2210  2
; 1179        2211  2
; 1180        2212  2   ! Check for service failure.
; 1181        2213  2   !
; 1182        2214  2   IF NOT .STATUS
; 1183        2215  2   THEN
; 1184        2216  2       SIGNAL(JBC$_COMREMJBC OR STS$K_ERROR, 0, .STATUS);
; 1185        2217  1   END;


                                                                  .EXTRN  SYS$DEQ

                                          001C 00000 ENTER_REMOTE_REQUEST:
                                                                  .WORD   Save R2,R3,R4                                   ; 2131
                     54 00000000'   EF   9E 00002                 MOVAB   FLAGS, R4                                       ;
                     5E             14   C2 00009                 SUBL2   #20, SP                                         ;
             00000000G              00   FB 0000C                 CALLS   #0, ALLOCATE_MEMORY                             ; 2170
                     52             50   D0 00013                 MOVL    R0, LKSB                                        ;
                     6E 2443424A    8F   D0 00016                 MOVL    #608387658, RESNAM                              ; 2175
                     50          04 AC   D0 0001D                 MOVL    SYSID, R0                                       ; 2176
                04   AE             60   D0 00021                 MOVL    (R0), RESNAM+4                                  ;
                08   AE          04 A0   B0 00025                 MOVW    4(R0), RESNAM+8                                 ;
                0C   AE             0A   D0 0002A                 MOVL    #10, RESNAM_DESC                                ; 2177
                10   AE             6E   9E 0002E                 MOVAB   RESNAM, RESNAM_DESC+4                           ; 2178
                                    7E   7C 00032                 CLRQ    -(SP)                                           ; 2189
                                    7E   D4 00034                 CLRL    -(SP)                                           ;
                                    52   DD 00036                 PUSHL   LKSB                                            ;
                               0000V CF  9F 00038                 PUSHAB  ENTER_REMOTE_REQUEST_AST                        ;
                                    7E   D4 0003C                 CLRL    -(SP)                                           ;
                                 24 AE   9F 0003E                 PUSHAB  RESNAM_DESC                                     ;
                     7E        0208 8F   3C 00041                 MOVZWL  #520, -(SP)                                     ;
                                    52   DD 00046                 PUSHL   LKSB                                            ;
                                    05   DD 00048                 PUSHL   #5                                              ;
                                    7E   D4 0004A                 CLRL    -(SP)                                           ;
```

```
                 00000000G  00          0B  FB 0004C          CALLS   #11, SYS$ENQ                              ;
                            53          50  D0 00053          MOVL    R0, STATUS                                ;
                            64          10  8A 00056          BICB2   #16, FLAGS                                ; 2202
                 00000689   8F          53  D1 00059          CMPL    STATUS, #1673                             ; 2203
                                        1A  12 00060          BNEQ    1$                                        ;
                            64          10  88 00062          BISB2   #16, FLAGS                                ; 2206
                                        7E  7C 00065          CLRQ    -(SP)                                     ; 2207
                                        7E  D4 00067          CLRL    -(SP)                                     ;
                                  04    A2  DD 00069          PUSHL   4(LKSB)                                   ;
                 00000000G  00          04  FB 0006C          CALLS   #4, SYS$DEQ                               ;
                                        52  DD 00073          PUSHL   LKSB                                      ; 2208
                 00000000G  EF          01  FB 00075          CALLS   #1, DEALLOCATE_MEMORY                     ;
                            11          53  E8 0007C  1$:     BLBS    STATUS, 2$                                ; 2214
                                        53  DD 0007F          PUSHL   STATUS                                    ; 2216
                                        7E  D4 00081          CLRL    -(SP)                                     ;
                            00048412    8F  DD 00083          PUSHL   #295954                                   ;
                 00000000G  00          03  FB 00089          CALLS   #3, LIB$SIGNAL                            ;
                                            04 00090  2$:     RET                                               ; 2217

; Routine Size:  145 bytes,    Routine Base:  CODE + 06C2
; 1187          2218  1 ROUTINE ENTER_REMOTE_REQUEST_AST(LKSB): NOVALUE=
; 1188          2219  1
; 1189          2220  1 !++
; 1190          2221  1 !
; 1191          2222  1 ! FUNCTIONAL DESCRIPTION:
; 1192          2223  1 !       This routine is the completion AST routine for obtaining another job
; 1193          2224  1 !       controller's remote request lock.
; 1194          2225  1 !
; 1195          2226  1 ! INPUT PARAMETERS:
; 1196          2227  1 !       LKSB            - Pointer to LKSB allocated from dynamic memory.
; 1197          2228  1 !
; 1198          2229  1 ! IMPLICIT INPUTS:
; 1199          2230  1 !       NONE
; 1200          2231  1 !
; 1201          2232  1 ! OUTPUT PARAMETERS:
; 1202          2233  1 !       NONE
; 1203          2234  1 !
; 1204          2235  1 ! IMPLICIT OUTPUTS:
; 1205          2236  1 !       NONE
; 1206          2237  1 !
; 1207          2238  1 ! ROUTINE VALUE:
; 1208          2239  1 !       NONE
; 1209          2240  1 !
; 1210          2241  1 ! SIDE EFFECTS:
; 1211          2242  1 !       NONE
; 1212          2243  1 !
; 1213          2244  1 !--
; 1214          2245  1
; 1215          2246  2 BEGIN
; 1216          2247  2 MAP
; 1217          2248  2       LKSB:           REF BBLOCK;     ! Pointer to lock status block
; 1218          2249  2
; 1219          2250  2
; 1220          2251  2 ! Check status of the $ENQ.
; 1221          2252  2 !
; 1222          2253  2 IF NOT .LKSB[0,0,16,0]
; 1223          2254  2 THEN
; 1224          2255  2     SIGNAL(JBC$_COMREMJBC OR STS$K_ERROR, 0, .LKSB[0,0,16,0]);
; 1225          2256  2
; 1226          2257  2
; 1227          2258  2 ! Release the lock to enable the receiving job controller to recover it.
; 1228          2259  2 !
; 1229          2260  2 $DEQ(LKID=.LKSB[4,0,32,0]);
; 1230          2261  2
; 1231          2262  2
; 1232          2263  2 ! Deallocate the LKSB.
; 1233          2264  2 !
; 1234          2265  2 DEALLOCATE_MEMORY(.LKSB);
; 1235          2266  1 END;


                                                  0004 00000 ENTER_REMOTE_REQUEST_AST:
                                                                    .WORD   Save R2                                         ; 2218
                                 52        04   AC  D0 00002        MOVL    LKSB, R2                                        ; 2253
```

```
                12          62 E8 00006      BLBS    (R2), 1$                    ; 2255
                7E          62 3C 00009      MOVZWL  (R2), -(SP)                 ;
                            7E D4 0000C      CLRL    -(SP)                       ;
                   00048412 8F DD 0000E      PUSHL   #295954                     ;
      00000000G  00         03 FB 00014      CALLS   #3, LIB$SIGNAL              ;
                            7E 7C 0001B 1$:  CLRQ    -(SP)                       ; 2260
                            7E D4 0001D      CLRL    -(SP)                       ;
                        04  A2 DD 0001F      PUSHL   4(R2)                       ;
      00000000G  00         04 FB 00022      CALLS   #4, SYS$DEQ                 ;
                            52 DD 00029      PUSHL   R2                          ; 2265
      00000000G  EF         01 FB 0002B      CALLS   #1, DEALLOCATE_MEMORY       ;
                               04 00032      RET                                 ; 2266

; Routine Size:  51 bytes,    Routine Base:  CODE + 0753
; 1237          2267    1 GLOBAL ROUTINE QUEUE_MASTER_AST: NOVALUE=
; 1238          2268    1
; 1239          2269    1 !++
; 1240          2270    1 !
; 1241          2271    1 ! FUNCTIONAL DESCRIPTION:
; 1242          2272    1 !       This routine is the completion AST routine for the queue master lock.
; 1243          2273    1 !       It is entered when the queue master job controller fails and releases
; 1244          2274    1 !       the lock.
; 1245          2275    1 !
; 1246          2276    1 ! INPUT PARAMETERS:
; 1247          2277    1 !       Standard AST routine parameters (not used).
; 1248          2278    1 !
; 1249          2279    1 ! IMPLICIT INPUTS:
; 1250          2280    1 !       NONE
; 1251          2281    1 !
; 1252          2282    1 ! OUTPUT PARAMETERS:
; 1253          2283    1 !       NONE
; 1254          2284    1 !
; 1255          2285    1 ! IMPLICIT OUTPUTS:
; 1256          2286    1 !       NONE
; 1257          2287    1 !
; 1258          2288    1 ! ROUTINE VALUE:
; 1259          2289    1 !       NONE
; 1260          2290    1 !
; 1261          2291    1 ! SIDE EFFECTS:
; 1262          2292    1 !       NONE
; 1263          2293    1 !
; 1264          2294    1 !--
; 1265          2295    1
; 1266          2296    2 BEGIN
; 1267          2297    2
; 1268          2298    2 ! Ensure that at least one job controller holds a timer on the timed job
; 1269          2299    2 ! queue.
; 1270          2300    2 !
; 1271          2301    2 AFTER_AST();
; 1272          2302    1 END;




                                  0000 00000        .ENTRY  QUEUE_MASTER_AST, Save nothing                  ; 2267
        00000000G  EF          00  FB 00002        CALLS   #0, AFTER_AST                                    ; 2301
                                    04 00009        RET                                                      ; 2302

; Routine Size:  10 bytes,    Routine Base:  CODE + 0786
; 1274          2303  1 END
; 1275          2304  0 ELUDOM



                                                                  .EXTRN  LIB$SIGNAL

;                                       PSECT SUMMARY
;
;       Name                        Bytes                        Attributes
;
;    COMMON                              5024  NOVEC,  WRT,  RD ,NOEXE,NOSHR,  LCL,  REL,  OVR,NOPIC,ALIGN(2)
;    CODE                                1936  NOVEC,NOWRT,  RD ,  EXE,NOSHR,  LCL,  REL,  CON,NOPIC,ALIGN(2)



;                                 Library Statistics
;
;                                                ---------- Symbols --------         Pages        Processing
;       File                                     Total    Loaded   Percent           Mapped       Time
;
;    _$255$DUA28:[SYSLIB]LIB.L32;1               18619        53         0           1000           00:01.4



; Information:  2
; Warnings:     0
; Errors:       0


;                                        COMMAND QUALIFIERS

;       BLISS/CHECK=(FIELD,INITIAL,OPTIMIZE)/LIS=LIS$:ASYNCHRON/OBJ=OBJ$:ASYNCHRON MSRC$:ASYNCHRON/UPDATE=(ENH$:ASYNCHRON)

; Size:          1886 code + 5074 data bytes
; Run Time:         00:34.2
; Elapsed Time:     03:54.5
; Lines/CPU Min:      4040
; Lexemes/CPU-Min: 39299
; Memory Used:  380 pages
; Compilation Complete
```

0191 AH-BT13A-SE
VAX/VMS V4.0

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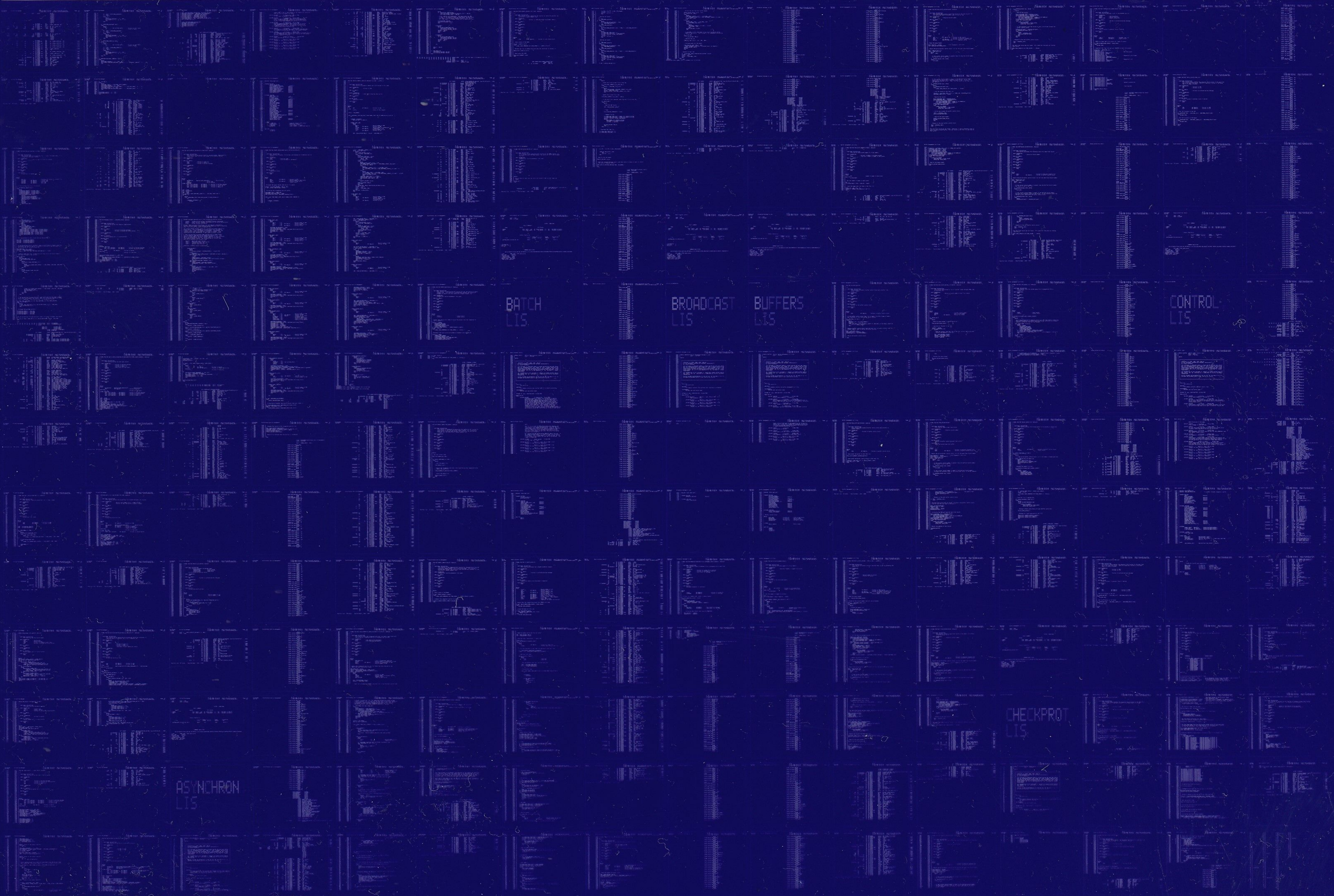
BATCH
LIS

BROADCAST
LIS

BUFFERS
LIS

CONTROL
LIS

CHECKPROT
LIS

ASYNCHRON
LIS