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SSSSSSSS YY YY SSSSSSS QQQQQQ UU UU EEEEEEEEE DDDDDDD EEEEEEEEE FFFFFFFF
SSSSSSSS YY YY SSSSSSS QQQQQQ UU UU EEEEEEEEE DDDDDDD EEEEEEEEE FFFFFFFF
SS SS YY YY SS SS QQ QQ UU UU EE EE DD DD EE EE FF FF
SS SS YY YY SS SS QQ QQ UU UU EE EE DD DD EE EE FF FF
SSSSSS YY YY SSSSS SS SS QQ QQ UU UU EE EE DD DD EE EE FFFFFFFF
SSSSSS YY YY SSSSS SS SS QQ QQ UU UU EE EE DD DD EE EE FFFFFFFF
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SSSSSS YY YY SSSSSSS SS SS QQ QQ UUUUUUUUU EEEEEEEEE DDDDDDD EEEEEEEEE FF FF
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SSSSSSSS DDDDDDD LL LL
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```
{ SYSQUEDEF.SDL - System job queue on-disk structure
{
{ Version 'V04-000'
```

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```
{**
{ FACILITY:
{ Job controller.
```

```
{ ABSTRACT:
{ This file contains the structure definitions for the system job queue.
```

```
{ ENVIRONMENT:
{ VAX/VMS operating system.
```

```
{ --
{ AUTHOR: Martin L. Jack, CREATION DATE: 16-Feb-1982
```

```
{ MODIFIED BY:
```

```
{ V03-005 JAK0209 J A Krycka 08-May-1984
{ Update SQH$K_STRUCTURE_LEVEL value.
{
{ V03-004 JAK0205 J A Krycka 27-Apr-1984
{ Reserve space for in queue records for larger account name,
{ username fields, and broadcast name fields.
{
{ V03-003 JAK0204 J A Krycka 20-Apr-1984
{ Add paginate flags to SMQ, SJH, and SQR definitions for the
{ queue, job, and file records.
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(\*\*

V03-002 MLJ0118 Martin L. Jack, 23-Aug-1983  
Change nam:s to conform to \$SJCDEF spelling.

V03-001 MLJ0115 Martin L. Jack, 30-Jul-1983  
Changes for job controller baselevel.

JOI  
LI  
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PS  
SW

```
module $SYSQUEDEF;
```

```
/*
/* Definition of on-disk system job queue.
/* General structure of all records.
/*
aggregate SYM structure prefix SYMS;
LINK longword unsigned;
TYPE byte unsigned;
constant (
    SCX
    . SFM
    . SFX
    . SQH
    . SQX
    . SMQ
    . SJH
    . SQR
    . SRQ
    . ENTRY_BITMAP
    . CHECKPOINT
    . FILE_SETUP_MODULES
    . FORM_SETUP_MODULES
    . GENERIC_TARGET
    . JOB_RESET_MODULES
    . LOG_SPECIFICATION
    . NOTE
    . OPERATOR_REQUEST
    . PAGE_SETUP_MODULES
    . PARAMETERS
    . REFUSAL_REASON
) equals 1 increment 1;
AUX_SEQUENCE byte unsigned;
SEQUENCE word unsigned;
ENTRY_NUMBER longword unsigned;
#symhdrsiz = .;
DATA character length 512-.;
end;
```

```
/* Link to next record in same list
/* record type
```

```
/* characteristic index
/* form
/* form index
/* header, record 1
/* queue index
/* queue
/* job
/* file
/* incomplete service
/* entry number bitmap
/* auxiliary for SJHST_CHECKPOINT
/* auxiliary for SQRST_FILE_SETUP_MODULES
/* auxiliary for SFMST_FORM_SETUP_MODULES
/* auxiliary for SMQSL_GENERIC_TARGET
/* auxiliary for SMQST_JOB_RESET_MODULES
/* auxiliary for SJHST_LOG_SPECIFICATION
/* auxiliary for SJHST_NOTE
/* auxiliary for SJHST_OPERATOR_REQUEST
/* auxiliary for SFMST_PAGE_SETUP_MODULES
/* auxiliary for SJHST_PARAMETERS
/* auxiliary for SJHST_REFUSAL_REASON
```

```
/* list sequence for auxiliary list
/* list sequence for SQR record
/* job entry number
```

```
/* beginning of general data area
```

```
/*
/* Header record, record 1 of file
/*
```

```
aggregate SQH structure prefix SQHS;
constant RECNO equals 1;
common header byte dimension #symhdrsiz fill;
STRUCTURE_LEVEL word unsigned;
constant STRUCTURE_LEVEL equals 4*256 + 1;
fill 1 character length 2 fill;
CHARACTERISTIC_LIST longword unsigned;
ENTRY_BITMAP_VECTOR longword unsigned dimension 8;
FORM_INDEX_LIST longword unsigned;
FREE_LIST longword unsigned;
HIGHEST_ENTRY_NUMBER longword unsigned;
HIGHEST_RECORD longword unsigned;
INCOMPLETE_SERVICE_LIST longword unsigned;
```

```
/* record number of this record
```

```
/* queue structure level
/* V4.0 level 0
```

```
/* head of list of characteristic index records
/* vector of links to entry bitmap extension records
/* head of list of form index records
/* head of list of free records
/* highest entry number in bitmaps
/* highest record number in file
/* head of list of incomplete service descriptors
```

```

NEXT_ENTRY_NUMBER      longword unsigned;      /* next entry number to be tried
OPEN_LIST              longword unsigned;      /* head of list of open jobs
OPEN_LIST_END          longword unsigned;
PENDING_BATCH_LIST     longword unsigned;      /* head of list of pending batch jobs
PENDING_BATCH_LIST_END longword unsigned;
PENDING_PRINT_LIST     longword unsigned;      /* head of list of pending symbiont jobs
PENDING_PRINT_LIST_END longword unsigned;
QUEUE_INDEX_LIST       longword unsigned;      /* head of list of queue index records
TIMER_LIST            longword unsigned;      /* head of list of timed release jobs
TIMER_LIST_END        longword unsigned;
record filler         byte dimension 256-. fill;
ENTRY_BITMAP          byte unsigned dimension 256;

end;

/*
/* Characteristic index
/*
aggregate SCX structure prefix SCXS;
constant ENTRIES equals 15;
NAME          character length 32;
NUMBER        byte unsigned;
end;

/*
/* Form index
/*
aggregate SFX structure prefix SFXS;
constant ENTRIES equals 12;
NAME          character length 32;
NUMBER        longword unsigned;
FORM_LINK     longword unsigned;
end;

/*
/* Queue index
/*
aggregate SQX structure prefix SQXS;
constant ENTRIES equals 12;
NAME          character length 32;
FLAGS         structure longword unsigned;
              bitfield;
              BATCH          bitfield;
              EXECUTOR       bitfield;
              GENERIC_SELECTION bitfield;
              end;
QUEUE_LINK    longword unsigned;
end;

/*
/* Form
/*
aggregate SFM structure prefix SFMS;
common_header byte dimension #symhdrsiz fill;

```

```

      FLAGS          structure longword unsigned;
                    bitfield:          /* form is sheet fed
      SHEET_FEED    bitfield:          /* lines are truncated
      TRUNCATE      bitfield:          /* lines are wrapped
                    end;
      DESCRIPTION   character length 256; /* descriptive text (ASCIC)
      NAME          character length 32; /* form name (ASCIC)
      NUMBER       longword unsigned;  /* form number
      STOCK        character length 32; /* stock name (ASCIC)
      MARGIN_LEFT  word unsigned;      /* left margin in characters
      MARGIN_RIGHT word unsigned;      /* right margin in characters
      WIDTH        word unsigned;      /* width in characters
      LENGTH       byte unsigned;      /* length in lines
      MARGIN_BOTTOM byte unsigned;     /* bottom margin in lines
      MARGIN_TOP   byte unsigned;     /* top margin in lines
      FORM_SETUP_MODULES character length 6; /* form setup modules
      PAGE_SETUP_MODULES character length 6; /* form page setup modules
      record_filter byte dimension 512-. fill;

end;

/*
/* Queue
/*
aggregate SMQ structure prefix SMQS;
common_header
  FLAGS
    BATCH          bitfield:          /* batch queue
    BATCH_EXPLICIT bitfield:          /* batch specification is explicit
    CPU_DEFAULT    bitfield:          /* default CPU limit defined
    CPU_MAXIMUM    bitfield:          /* maximum CPU limit defined
    FILE_BURST     bitfield:          /* default file burst page on all
    FILE_BURST_ONE bitfield:          /* default file burst page on first
    FILE_FLAG      bitfield:          /* default file flag page on all
    FILE_FLAG_ONE  bitfield:          /* default file flag page on first
    FILE_TRAILER   bitfield:          /* default file trailer page on all
    FILE_TRAILER_ONE bitfield:        /* default file trailer page on last
    GENERIC_QUEUE  bitfield:          /* queue is generic
    GENERIC_SELECTION bitfield:      /* queue can take jobs from generic queue
    JOB_BURST      bitfield:          /* print job burst page
    JOB_FLAG       bitfield:          /* print job flag page
    JOB_SIZE_SCHEDULING bitfield:    /* schedule print jobs by size
    JOB_TRAILER    bitfield:          /* print job trailer page
    LOWERCASE     bitfield:          /* queue can take lowercase jobs
    PAGINATE      bitfield:          /* default file form feed at queue level
    RETAIN_ALL_JOBS bitfield:        /* retain all jobs after execution
    RETAIN_ERROR_JOBS bitfield:     /* retain jobs that complete unsuccessfully
    SERVER        bitfield:          /* server or generic server queue
    SWAP          bitfield:          /* swap jobs
    TERMINAL      bitfield:          /* terminal or generic terminal queue
    WSDEFAULT     bitfield:          /* working set default defined
    WSEXTENT      bitfield:          /* working set extent defined
    WSQUOTA       bitfield:          /* working set quota defined
  end;
  STATUS
    ALIGNING      bitfield:          /* queue is aligning

```

```

OPERATOR_REQUEST      bitfield;      /* queue has a pending operator request
PAUSED                bitfield;      /* queue is paused
PAUSING               bitfield;      /* queue is pausing
REMOTE                bitfield;      /* device is remote
RESETTING             bitfield;      /* queue is resetting
RESUMING              bitfield;      /* queue is resuming
STALLED               bitfield;      /* device is stalled
STARTING              bitfield;      /* queue is starting
STOPPED               bitfield;      /* queue is stopped
STOPPING              bitfield;      /* queue is stopping
UNAVAILABLE           bitfield;      /* device is unavailable
end;
ACM_BEGTIM            quadword;       /* time job began output
ACM_GETCNT            longword unsigned; /* read operations by symbiont
ACM_PAGECNT           longword unsigned; /* pages printed by symbiont
ACM_QIOCNT            longword unsigned; /* write operations by symbiont
ACM_SYMCPUTIM         longword unsigned; /* CPU used by symbiont
ASSIGNED_QUEUE_LINK  longword unsigned; /* link to assigned queue
CHARACTERISTICS       character length 16; /* characteristics mask
CPU_DEFAULT           longword unsigned; /* default CPU limit
CPU_MAXIMUM           longword unsigned; /* maximum CPU limit
CURRENT_LIST          longword unsigned; /* head of list of current jobs
CURRENT_LIST_END      longword unsigned;
DEVICE_NAME           character length 32; /* target device (ASCIC)
FORM_LINK             longword unsigned; /* link to form definition record
GENERIC_TARGET        longword unsigned; /* link to block of generic target queues
HOLD_LIST             longword unsigned; /* head of list of held jobs
HOLD_LIST_END         longword unsigned;
JOB_SIZE_MAXIMUM      longword unsigned; /* largest job this queue accepts
JOB_SIZE_MINIMUM      longword unsigned; /* smallest job this queue accepts
LIBRARY               character length 40; /* device control library file name (ASCIC)
NAME                  character length 32; /* queue name (ASCIC)
OWNER_UIC             longword unsigned; /* queue owner UIC
PROCESSOR             character length 40; /* symbiont file name (ASCIC)
STREAM_SCT            longword unsigned; /* pointer to symbiont control table
OPEN_JOB_COUNT        word unsigned; /* count of jobs in open queue
PENDING_JOB_COUNT     word unsigned; /* count of jobs in pending queue
PROTECTION            word unsigned; /* queue protection
SYSID                 character length 6; /* target system ID
TIMER_JOB_COUNT       word unsigned; /* count of jobs in timer queue
WSDEFAULT             word unsigned; /* working set default
WSEXTENT              word unsigned; /* working set extent
WSQUOTA               word unsigned; /* working set quota
BASE_PRIORITY         byte unsigned; /* process base priority
CURRENT_JOB_COUNT     byte unsigned; /* count of jobs in current queue
JOB_LIMIT             byte unsigned; /* maximum current iobs
STREAM_INDEX          byte unsigned; /* stream index for this stream
JOB_RESET_MODULES     character length 6; /* job reset modules
record_filler        byte dimension 512-. fill;
end;

/*
/* Job
/*
aggregate SJH structure prefix SJH$;

```



```

common_header
FLAGS
  CPU_MAXIMUM      bitfield: /* maximum CPU limit defined
  FILE_BURST       bitfield: /* default file burst page on all
  FILE_BURST_EXPLICIT bitfield: /* file burst default explicit
  FILE_BURST_ONE   bitfield: /* default file burst page on first
  FILE_FLAG        bitfield: /* default file flag page on all
  FILE_FLAG_EXPLICIT bitfield: /* file flag default explicit
  FILE_FLAG_ONE    bitfield: /* default file flag page on first
  FILE_TRAILER     bitfield: /* default file trailer page on all
  FILE_TRAILER_EXPLICIT bitfield: /* file trailer default explicit
  FILE_TRAILER_ONE bitfield: /* default file trailer page on last
  LOG_DELETE       bitfield: /* delete batch log after printing
  LOG_NULL         bitfield: /* suppress batch log
  LOG_SPOOL        bitfield: /* spool batch log
  LOWERCASE        bitfield: /* job requires lowercase equipment
  NOTIFY          bitfield: /* notify user upon completion
  PAGINATE         bitfield: /* default file form feed at job level
  PAGINATE_EXPLICIT bitfield: /* file form feed default explicit
  RESTART         bitfield: /* job can restart
  WSDEFAULT        bitfield: /* working set default defined
  WSEXTENT         bitfield: /* working set extent defined
  WSQUOTA          bitfield: /* working set quota defined
end;

STATUS
  ABORTED          bitfield: /* job was aborted
  ABORTING         bitfield: /* job is aborting
  DELETED          bitfield: /* job was deleted
  EXECUTING        bitfield: /* job is executing
  FILE_STARTING    bitfield: /* symbiont is starting a file
  HOLDING          bitfield: /* job is holding due to /HOLD
  OPEN             bitfield: /* job is open
  REFUSED          bitfield: /* job is holding due to symbiont request
  REQUEUE          bitfield: /* requeue job after abort
  REQUEUE_HOLD     bitfield: /* hold job after requeue
  RESTARTING       bitfield: /* job was partially executed
  RETAINED         bitfield: /* job was retained
  STARTING         bitfield: /* job is starting
  SYNCHRONIZE      bitfield: /* SYNCHRONIZE service in progress
  SYSTEM_FAILURE   bitfield: /* job was executing at a crash or queue reset
end;

ACCOUNT
account_filler    character length 8; /* account of submitter
debug_filler      byte dimension 24 fill; /* reserved for expansion of account field
AFTER_TIME        byte dimension 100 fill; /* unused area for debug purposes
CHARACTERISTICS   quadword; /* time of submission or AFTER time if later
CLI               character length 16; /* characteristics mask
COMPLETED_BLOCKS character length 40; /* CLI file name (ASCIC)
CONDITION_VECTOR longword unsigned; /* completed blocks excluding current file
  CONDITION_1     longword unsigned; /* completion status
  CONDITION_2     longword unsigned;
  CONDITION_3     longword unsigned;
end;

CPU_MAXIMUM       longword unsigned; /* maximum CPU limit
CURRENT_FILE_CHKPT longword unsigned; /* current file checkpoint
CURRENT_FILE_LINK longword unsigned; /* link to file currently being processed

```

```

FILE_LIST          longword unsigned; /* head of list of files
FILE_LIST_END      longword unsigned; /* link to end of list of files
FORM_LINK          longword unsigned; /* link to form definition record
JOB_SIZE           longword unsigned; /* total size of all files in job
LOG_QUEUE_LINK     longword unsigned; /* link to log queue
NAME               character length 40; /* job name (ASCII)
PID                longword unsigned; /* PID of submitter
QUEUE_LINK         longword unsigned; /* link to queue
REQUEUE_QUEUE_LINK longword unsigned; /* link to queue for requeue operation
TIME               quadword; /* time of submission
UIC                longword unsigned; /* UIC of submitter
USERNAME           character length 12; /* username of submitter
username_filler    byte dimension 20 fill; /* reserved for expansion of username field
EXECUTOR_PID       longword unsigned; /* PID of batch job
SYSID              character length 6; /* system id of submitter
WSDEFAULT          word unsigned; /* working set default
WSEXTENT           word unsigned; /* working set extent
WSQUOTA            word unsigned; /* working set quota
FILE_COPIES_CHKPT byte unsigned; /* file copy checkpoint
FILE_COPIES_DONE   byte unsigned; /* number of copies of current file completed
JOB_COPIES         byte unsigned; /* number of copies of job to print
JOB_COPIES_CHKPT  byte unsigned; /* job copy checkpoint
JOB_COPIES_DONE    byte unsigned; /* number of copies of job completed
PRIORITY           byte unsigned; /* job priority
REQUEUE_PRIORITY   byte unsigned; /* job priority for requeue
filler            byte fill; /* spare
CHECKPOINT         character length 32; /* executor checkpoint
LOG_SPECIFICATION character length 6; /* log file specification
NOTE               character length 6; /* user note text
OPERATOR_REQUEST   character length 6; /* operator request text
PARAMETERS         character length 32; /* job parameters
REFUSAL_REASON     character length 6; /* reason that symbiont refused job
record_filler      byte dimension 512-. fill;

```

end;

/\*  
/\*  
/\*

File

aggregate SQR structure prefix SQR\$;

common\_header

FLAGS

```

DELETE_FILE        bitfield; /* delete file
DELETE_PERMISSION bitfield; /* deletion permitted by file access
DOUBLE_SPACE       bitfield; /* double space output
FILE_BURST         bitfield; /* print file burst page
FILE_BURST_EXPLICIT bitfield; /* file burst specification explicit
FILE_FLAG          bitfield; /* print file flag page
FILE_FLAG_EXPLICIT bitfield; /* file flag specification explicit
FILE_TRAILER       bitfield; /* print file trailer page
FILE_TRAILER_EXPLICIT bitfield; /* file trailer specification explicit
PAGE_HEADER        bitfield; /* print page header
PAGINATE           bitfield; /* paginate output (issue form feed)
PAGINATE_EXPLICIT bitfield; /* paginate output (issue form feed) explicit
PASSALL           bitfield; /* print file passall
end;

```

JOB

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MAC

LIT

```

CONDITION VECTOR                structure;                /* conditions to print
  CONDITION_1                    longword unsigned;
  CONDITION_2                    longword unsigned;
  CONDITION_3                    longword unsigned;
end;
FILE_IDENTIFICATION              structure character length 28; /* file identification: DVI, FID, DID
  FILE_ID_DVI                    character length 16;          /* DVI
  FILE_ID_FID_NUM                word unsigned;                /* FID
  FILE_ID_FID_SEQ                word unsigned;
  FILE_ID_FID_RVN                structure word unsigned;
  FILE_ID_FID_RVN                byte unsigned;
  FILE_ID_FID_NMX                byte unsigned;
end;
  FILE_ID_DID_NUM                word unsigned;                /* DID
  FILE_ID_DID_SEQ                word unsigned;
  FILE_ID_DID_RVN                structure word unsigned;
  FILE_ID_DID_RVN                byte unsigned;
  FILE_ID_DID_NMX                byte unsigned;
end;
FILE_SIZE                        longword unsigned;          /* file size in blocks
FIRST_PAGE                       longword unsigned;          /* first page of file to print
LAST_PAGE                        longword unsigned;          /* last page of file to print
FILE_COPIES                      byte unsigned;              /* number of copies of file to print
FILE_SETUP_MODULES               character length 6;          /* file setup modules
FILE_SPECIFICATION               character length 256;         /* file specification
record_filler                    byte dimension 512-. fill;
end;

/*
/*   Incomplete service descriptor
/*
aggregate SRQ structure prefix SRQ$;
common header                    byte dimension #symhdrsiz fill;
FUNCTION_CODE                    longword unsigned;          /* function code
constant (
  START_JOB                      /* start a job
  ABORT_JOB                      /* abort a job
  SYNCHRONIZE_JOB                /* synchronize on job
  START_QUEUE                    /* start a queue
  STOP_QUEUE                     /* stop a queue
  PAUSE_QUEUE                    /* pause a queue
  RESUME_QUEUE                   /* resume a queue
  RESET_QUEUE                    /* reset a queue
  BROADCAST_MESSAGE              /* broadcast a message
  RESPONSE                       /* return a response
  DELETE_FILES                   /* delete files in a job
  START_SYMBIONT                 /* start a symbiont stream
) equals T increment 1;
FLAGS                             structure longword unsigned;
  NO_RESPONSE                    bitfield;                    /* no response required to service
  STALLED                        bitfield;                    /* service is waiting for an external action
end;
SENDING_SYSID                    character length 6;          /* system ID of sending node
RECEIVING_SYSID                  character length 6;          /* system ID of receiving node

```

```
parameter_union
  standard
    P1
    P2
    P3
    P4
    P5
    SRB
  end;
  broadcast_message
    BRDCST_USERNAME
    brdcst_username_filler
    BRDCST_LENGTH
    BRDCST_TEXT
  end;
end;

union fill;
structure fill;
longword unsigned; /* function-dependent parameters
longword unsigned; /*
longword unsigned; /*
longword unsigned; /*
character length 64; /*
character length 0; /* service response block

structure fill;
character length 12; /* broadcast username
byte dimension 20 fill; /* reserved for expansion of brdcst_username
word unsigned; /* message length
character length 512-.; /* message text

end;

end_module $SYSQUEDEF;
```

