



```

SSSSSSSS MM MM BBBB8888 DDDDDDDD EEEEEEEEE FFFFFFFF
SSSSSSSS MM MM BBBB8888 DDDDDDDD EEEEEEEEE FFFFFFFF
SS M MM M BB BB DD DD EE FF
SS M MM M BE BB DD DD EE FF
SS M M M BB BB DD DD EE FF
SS M M M BB BB DD DD EE FF
SSSSSS MM MM BBBB8888 DD DD EEEEEEE FFFFFFFF
SSSSSS MM MM BBBB8888 DD DD EEEEEEE FFFFFFFF
SS MM MM BB BB DD DD EE FF
SS MM MM BB BB DD DD EE FF
SS MM MM BB BB DD DD EE FF
SSSSSSSS MM MM BBBB8888 DDDDDDDD EEEEEEEEE FF
SSSSSSSS MM MM BBBB8888 DDDDDDDD EEEEEEEEE FF

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....  
....  
....

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SSSSSSSS DDDDDDDD LL
SSSSSSSS DDDDDDDD LL
SS DD DD LL
SS DD DD LL
SS DD DD LL
SS DD DD LL
SSSSSS DD DD LL
SSSSSS DD DD LL
SS DD DD LL
SS DD DD LL
SS DD DD LL
SSSSSSSS DDDDDDDD LLLLLLLLLL
SSSSSSSS DDDDDDDD LLLLLLLLLL

```

module PRTSMB; /\* Private symbiont definitions

```

/*
/* Symbolic definitions for symbionts
/*
/* Version 'V03-016'
/*
/******
/*
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/*
/****
/* FACILITY: Print symbiont
/*
/* ABSTRACT: Data Structure Definitions
/*
/* ENVIRONMENT: Non-executable.
/*
/* AUTHOR: Gregory R. Robert, August, 1982
/*
/* MODIFIED BY:
/*
/* V03-016 GRR0016 Gregory R. Robert 09-May-1984
/* Move hangup flag into stream flags so that it is not
/* cleared at start task.
/*
/* V03-015 GRR0015 Gregory R. Robert 29-Apr-1984
/* FT2 bugfixes. Added header_built flag, and resorted
/* various fields.
/*
/* V03-014 RRB0014 Rowland R. Bradley 27-Apr-1984
/* Add dummy longwords for future work during Version V04-000
/* Reorganize the SCB data structure for clarity.
/*
/* V03-013 RRB0013 Rowland R. Bradley 23-Feb-1984
/* Add definitions need for enhancement of print symbiont.
/*

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/*      Add constants for accessing and describing these definitions.
/*
/*      V03-012 GRR0009      Gregory R. Robert      29-Sep-1983
/*      Remove carriage control definitions -- now in lib.l32.
/*
/*      V03-011 GRR0008      Gregory R. Robert      28-Sep-1983
/*      Remove use of S_ACCOUNTING_DATA and S_CHECKPOINT_DATA
/*
/*      V03-010 GRR0005      Gregory R. Robert      26-Sep-1983
/*      Move public definitions to SYSDEF.SDL (lib).
/*
/*      3B-009  GRR3009      Gregory R. Robert      23-Aug-1983
/*      Bugfixes, page_setup_modules, form_setup_modules,
/*      sheet_feed, symbiont_initiated_pause_task and stop_stream,
/*      hangup code, read and write item services
/*
/*      3B-008  GRR3008      Gregory R. Robert      03-Aug-1983
/*      Rewrite for new design.
/*
/*      3B-007  GRR3007      Gregory R. Robert      29-Jul-1983
/*      Converted previx from SMB_ to PSM$ and many other revisions.
/*
/*      3B-006  GRR3006      Gregory R. Robert      23-Jun-1983
/*      Basic aligning, positioning, searching, checkpointing,
/*      and module handling.
/*
/*      3B-005  GRR3005      Gregory R. Robert      27-May-1983
/*      Substantially revised for FI1.
/*
/*      3B-004  GRR3004      Gregory R. Robert      24-Feb-1983
/*      Significant revision to accomodate new 3B features.
/*
/*      3B-003  GRR3003      Gregory R. Robert      28-Feb-1983
/*      Specify user parameter items and extend print flags
/*      to include alignment and rewind features. Removed
/*      extra size definitions now generated by SDL.
/*
/*      3B-002  GRR3002      Gregory R. Robert      19-JAN-1983
/*      Give explicit length to structures declared 'character'
/*
/*
```

```
/* *****
/* *           REMAINING DEFINITIONS ARE VMS-PRTSMB PRIVATE           *
/* *****

/*
/* Miscellaneous constants
/*
constant PSMSK_CHECKPOINT_LIMIT equals 20;
constant PSMSK_DEFBUFSIZ      equals 512;
constant PSMSK_FACILITY       equals 262;
constant PSMSK_FIRST_CHAR_USED equals 3;
constant PSMSK_MAXSTREAMS     equals 32;
constant PSMSK_NUMOUTBUF      equals 3;
/*
constant PSMSK_MAX_PAGE_SIZE  equals 8712; /* Largest possible page
constant PSMSK_FORM_132x66    equals 1; /*
constant PSMSK_FORM_132x51    equals 2;
constant PSMSK_FORM_80x66     equals 3;
constant PSMSK_FORM_80x51     equals 4;
constant PSMSK_FORM_40xANY     equals 5;
constant PSMSK_FORM_NON_STD   equals 0;
/*
/* Standard carriage controls --
/* leading line feed, trailing carriage return
/* leading form feed, trailing carriage return
/* leading form feed
/*

constant PSMSK_LF_CR equals %X0D010A01;
constant PSMSK_FF_CR equals %X0D010C01;
constant PSMSK_FF equals %X00000C01;

/*
/* Format effector codes
/*
constant (
    BS, /* Backspace
    HT, /* Horizontal tab
    LF, /* Line feed
    VT, /* Vertical tab
    FF, /* Form feed
    CR, /* Carriage return
) equals 8 increment 1 prefix PSMS tag K_CHAR;

constant PSMSK_CHAR_APC equals 095; /* "" Application Program Command
constant PSMSK_CHAR_CSI equals 091; /* "T" Control String Introducer
constant PSMSK_CHAR_DCS equals 080; /* "P" Device Control String
constant PSMSK_CHAR_ESC equals 027; /* "" ESCape
constant PSMSK_CHAR_OSC equals 093; /* "]" Operating System Command
constant PSMSK_CHAR_PM equals 094; /* "" Privacy Message
constant PSMSK_CHAR_ST equals 092; /* "" String Terminator
```

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/*
/*   Structure types
/*
constant (
    DSB,          /* Dynamic string block
    IOB,          /* IO control block
    SCB           /* Stream control block
) equals 1 increment 1 prefix PSMS tag K_STRUCTURE;

/*
/*   Dynamic String Block
/*
aggregate DSB structure prefix DSB_:
    QLINKS      quadword unsigned;      /* Queue links
    DESC        quadword unsigned;      /* Descriptor
end;

/*
/*   Input Output control Block
/*
aggregate IOB structure prefix IOB_:
    QLINKS      quadword unsigned;      /* Output queue buffer links
    STRUCTURE   structure longword unsigned; /* Structure ID
    TYPE        byte unsigned;          /* - type
    LEVEL       byte unsigned;          /* - level
    SIZE        word unsigned;          /* - size
end;
    IOSB        structure quadword unsigned; /* IOSB
    IO_STATUS   word unsigned;          /* - word 1
    IO_LENGTH   word unsigned;          /* - word 2
    IO_3        word unsigned;          /* - word 3
    IO_4        word unsigned;          /* - word 4
end;
    CONTEXT     address;                /* User context
    ROUTINE     address;                /* Routine address
    BUFFER      quadword unsigned;      /* Buffer descriptor
    RECORD      quadword unsigned;      /* Record descriptor
    FLAGS       structure longword unsigned; /* IOB flags
    CHECKPOINT_PENDING bitfield mask; /* - checkpoint pending
    FLUSH_PENDING bitfield mask;      /* - flushing output stream
    PASSACL     bitfield mask;         /* - write noformat
    PAUSE_PENDING bitfield mask;      /* - respond when IO complete
    FILLER      bitfield length 32-^ fill;
end;
CHECKPOINT_DATA character length 24; /* Checkpoint
end;

/*
/*   Message Item Table entry structure
/*
aggregate MIT structure prefix MIT_:

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TYPE      byte:
constant BYTE      equals 1;      /* Item type (SIGNED)
constant WORD      equals 2;      /* - byte
constant LONGWORD  equals 4;      /* - word
constant QUADWORD  equals 8;      /* - longword
constant DYNAMIC   equals -1;     /* - quadword
constant STATIC    equals -2;     /* - dynamic descriptor
constant          /* - static descriptor

FLAGS     ture byte unsigned;    /* 10 flags
RESET     field mask;           /* - reset at start of task
FILLER    field length 08-^ fill;

OFFSET    rd unsigned;         /* Offset to item in structure
end;

/*
/*  Servi  outine Table entry structure
/*
aggregate SRV structure prefix SRV_:
SERVICE   address;            /* Address of service routine
USER_ARGUMENT longword unsigned; /* User supplied arguement

FLAGS     structure longword unsigned; /* Service flags
USER_ALLOWED bitfield mask;      /* - user may provide service
USER_SUPPLIED bitfield mask;     /* - user has provided service
FILLER    bitfield length 08-^ fill;
END;

SERVICE_TYPE byte unsigned;    /* Type of service routine
constant ( /* Define service types
FILE_SERVICE, /* - file processor
FORMAT_SERVICE, /* - formatting routine
GENERAL_SERVICE, /* - other input routines
LIBRARY_SERVICE, /* - library routines
OUTPUT_SERVICE /* - output routine
) equals 1 increment 1;

RESERVED   character length 3 tag Z; /* (fill out the longword)
end;

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```

/*
/* Stream Control Block
/*
aggregate SCB structure prefix PSM$;

/*
/* Standard structure header
/*
QLINKS      quadword unsigned;      /* Structure queue links
STRUCTURE   structure longword unsigned; /* Structure ID
TYPE        byte unsigned;          /* - type
LEVEL       byte unsigned;          /* - level
SIZE        word unsigned;          /* - size
end;

/*
/* Symbiont state flags
/*
STREAM_FLAGS structure longword unsigned; /* Stream state flags
ACTIVE        bitfield mask;          /* - Queue is started
EXPAND_TABS   bitfield mask;          /* - Expand tabs to spaces
HANGUP        bitfield mask;          /* - data set hangup
JOB_INITIALIZE bitfield mask;          /* - Job reset pending
FILLER        bitfield length 32-^ fill;
end;

TASK_FLAGS   structure longword unsigned; /* Job state flags
ALIGN        bitfield mask;          /* - alignment in progress
BUSY          bitfield mask;          /* - task in progress
EOF           bitfield mask;          /* - force end of file
ESCAPE_IN_PROGRESS bitfield mask;      /* - escape sequence in progress
FAB_VALID     bitfield mask;          /* - FAB connect succeeded
FIRST_RECORD  bitfield mask;          /* - first record of input service
IMPLICIT_FORMFEED bitfield mask;      /* - implicit formfeed detected
NEW_RECORD    bitfield mask;          /* - new input record
PAGE_HEADER_BUILT bitfield mask;       /* - Page header template built
READ_OFFSET   bitfield mask;          /* - offset next read
RESET         bitfield mask;          /* - STOP/NEXT or STOP/RESET in progress
RESUME_WAIT   bitfield mask;          /* - waiting for resume command
SEARCH_FOR_PAGE bitfield mask;        /* - page search in progress
SEARCH_FOR_STRING bitfield mask;      /* - string search in progress
SUPPRESS_OUTPUT bitfield mask;        /* - output suppressed
FILLER        bitfield length 32 - ^ fill;
end;

/*
/* Message items
/*
ACCOUNTING_DATA quadword unsigned; /* Accounting information
ACCOUNT_NAME    quadword unsigned; /* Account name
AFTER_TIME      quadword unsigned; /* /AFTER
ALIGNMENT_PAGES longword unsigned; /* /ALIGN
BOTTOM_MARGIN   longword unsigned; /* Trailing blank lines
CHARACTERISTICS quadword unsigned; /* /CHARACTERISTICS
CHLCKPOINT_DATA quadword unsigned; /* Checkpoint information
CONDITION_VECTOR quadword unsigned; /* Error messages

```



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DEVICE_NAME      quadword unsigned; /* /ON
DEVICE_STATUS    longword  unsigned; /* Device status
ENTRY_NUMBER     longword  unsigned; /* Job entry number
EXECUTOR_QUEUE   quadword  unsigned; /* /QUEUE
FILE_COPIES      longword  unsigned; /* /COPIES
FILE_COUNT       longword  unsigned; /* Current file copy number
FILE_SETUP_MODULES quadword unsigned; /* /SETUP (print)
FIRST_PAGE       longword  unsigned; /* /PAGES
FORM_LENGTH      longword  unsigned; /* /LENGTH
FORM_SETUP_MODULES quadword unsigned; /* /SETUP (define/form)
FORM_NAME        quadword  unsigned; /* Name of physical form
FORM_WIDTH       longword  unsigned; /* /WIDTH
FILE_IDENTIFICATION quadword unsigned; /* Device, fid, and did
FILE_SPECIFICATION quadword unsigned; /* File name
JOB_COPIES       longword  unsigned; /* /JOB_COUNT
JOB_COUNT        longword  unsigned; /* Current job copy number
JOB_NAME         quadword  unsigned; /* /NAME
JOB_RESET_MODULES quadword  unsigned; /* /SEPARATION
LAST_PAGE        longword  unsigned; /* /PAGES
LEFT_MARGIN      longword  unsigned; /* /LEFT MARGIN
LIBRARY_SPECIFICATION quadword unsigned; /* /LIBRARY
MAXIMUM_STREAMS  longword  unsigned; /* Maximum streams supported
MESSAGE_VECTOR   quadword  unsigned; /* Error messages to print
NOTE            quadword  unsigned; /* /NOTE
PAGE_SETUP_MODULES quadword unsigned; /* To be implemented
PARAMETER_1     quadword  unsigned; /* /PARAMETER
PARAMETER_2     quadword  unsigned; /* /PARAMETER
PARAMETER_3     quadword  unsigned; /* /PARAMETER
PARAMETER_4     quadword  unsigned; /* /PARAMETER
PARAMETER_5     quadword  unsigned; /* /PARAMETER
PARAMETER_6     quadword  unsigned; /* /PARAMETER
PARAMETER_7     quadword  unsigned; /* /PARAMETER
PARAMETER_8     quadword  unsigned; /* /PARAMETER
PRINT_CONTROL    longword  unsigned; /* Printing control
PRIORITY        longword  unsigned; /* Queue priority
QUEUE           quadword  unsigned; /* /QUEUE
REFUSE_REASON    quadword  unsigned; /* Reason task refused
RELATIVE_PAGE    longword; /* /BACKWARD, /FORWARD values
REQUEST_CONTROL  longword  unsigned; /* Request control
REQUEST_RESPONSE longword  unsigned; /* Request being responded to
RIGHT_MARGIN     longword  unsigned; /* /RIGHT MARGIN
SEARCH_STRING    quadword  unsigned; /* /SEARCH value
SEPARATION_CONTROL longword  unsigned; /* Separation control
STOP_CONDITION   longword  unsigned; /* /ABORT or /REQUEUE
TIME_QUEUED      quadword  unsigned; /* Time queued
TOP_MARGIN       longword  unsigned; /* /TOP_MARGIN
UIC             longword  unsigned; /* UIC of submittor
USER_NAME       quadword  unsigned; /* Username

/*
/* Queue headers
/*
BUFFER_QUEUE     quadword  unsigned; /* Buffer queue headers
CHECKPOINT_QUEUE quadword  unsigned; /* Checkpoint queue headers
INPUT_QUEUE      quadword  unsigned; /* Nested input queue

```

```

/*
/* Miscellaneous
/*
CHANNEL          longword unsigned; /* Output channel number
CHECKPOINT       address;           /* Address of checkpoint
COLUMN          longword unsigned; /* Current column number
CONDITION TEXT  quadword unsigned; /* Expanded error messages
DEVICE_CLASS    longword unsigned; /* Device class
DEVICE_TYPE     longword unsigned; /* Device type
FUNCTION_ARGUMENT longword unsigned; /* Work area for service calls
JOB             address;           /* I/O block address
ITEM_FLAGS      quadword unsigned; /* Item flags
KEEP_ALIVE     longword unsigned; /* Keep alive count
L_MARGIN       longword unsigned; /* Current left margin
LAST_ENTRY_NUMBER longword unsigned; /* Entry number of previous job
LIBRARY_INDEX  longword unsigned; /* Library context
LINE           longword unsigned; /* Current line number
MODULE_LIST    quadword unsigned; /* Library module list
MODULE_NAME    quadword unsigned; /* Current library module
NON_AST_STATUS longword unsigned; /* Status from non-ast routines
OUTPUT_BUFFER  quadword unsigned; /* Output buffer descriptor
OUTPUT_QIOS    longword unsigned; /* Qio's output
PAGE           longword unsigned; /* Page number
PAGE_HEADER    quadword unsigned; /* Page header descriptor
PAGE_LENGTH    longword unsigned; /* Current Page Length
PAGE_POINTER   address;           /* Address of page array buffer
PAGE_WIDTH     longword unsigned; /* Current Page Width
PRINT_FLAGS    longword unsigned; /* Print format flags
RFA           quadword;          /* Record file address
SEARCH_CONTEXT quadword unsigned; /* Search context
SERVICE_LIST  longword unsigned; /* Service routines to execute
SERVICE_OPEN  longword unsigned; /* Service routines that are open
SERVICE_STATUS longword unsigned; /* Service completion status
START_PAGE    longword unsigned; /* Start when reached
STOP_PAGE     longword unsigned; /* Stop when reached
STREAM_INDEX  longword unsigned; /* Job controller stream
T_MARGIN     longword unsigned; /* Current top margin
TIME_PRINTED quadword unsigned; /* Time printed
USER_BUFFER   quadword unsigned; /* Input buffer descriptor
XLATE_TABLE   address;           /* Translation table

```

```

/*
/* RMS block structure pointers
/*

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```

FAB          address; /* FAB block
NAM          address; /* NAM block
RAB          address; /* RAB block
XABDAT      address; /* XABDAT block
XABFHC      address; /* XABFHC block
XABPRO      address; /* XABPRO block

```

```

/*
/* No longword alignment past here
/*

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/*

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```

/* Input service context area
/*
SERVICE_CONTEXT structure;
INPUT_RECORD      quadword unsigned; /* Input record descriptor
RECORD_HEADER     longword unsigned; /* Input record header
RECORD_NUMBER     longword unsigned; /* Current record number
USER_RECORD       quadword unsigned; /* User record desc
CARCON            structure longword unsigned; /* Carriage control
  PREFIX_COUNT     byte unsigned; /* - prefix byte count
  PREFIX_CHAR      byte unsigned; /* - prefix character
  POSTFIX_COUNT    byte unsigned; /* - postfix byte count
  POSTFIX_CHAR     byte unsigned; /* - postfix record character
end;
CC_TYPE           byte unsigned; /* Carriage control type
SERVICE_INDEX    byte unsigned; /* Input service index
end;

ACCOUNTING_AREA   character length 16; /* Accounting data
CONDITION_AREA    character length 4 * 5; /* Condition data

CHECKPOINT_DEPTH byte; /* Number of checkpoints saved
ESCAPE_STATE      byte unsigned; /* Escape sequence state
FILE_BURST_CHAR   byte unsigned; /* Burst char for flag page
INPUT_DEPTH       byte; /* Number of services "pushed"
JOB_BURST_CHAR    byte unsigned; /* Burst char for job page
STATE             byte unsigned; /* Symbiont state

/*
/* Patch area
/*
dummy_0           longword unsigned;
dummy_1           longword unsigned;
dummy_2           longword unsigned;
dummy_3           longword unsigned;
dummy_4           longword unsigned;
dummy_5           longword unsigned;
dummy_6           longword unsigned;
dummy_7           longword unsigned;
dummy_8           longword unsigned;
dummy_9           longword unsigned;

/*
/* NB: The user context area begins at the end of the SCB and extends for
/* a user defined amount. No SCB definitions may be placed after it.
/*
USER_CONTEXT_AREA longword unsigned tag R; /* User context area

end;
end_module;

```

PLIWRITE LIS	BANNER LIS
PLIVECTOR LIS	SMBREQ REQ
PLIRODATA LIS	SMBRUSHR MAP
PLISTRING LIS	SMBDEF SOL
PRTSMB MAP	DISPATCH LIS
PRTSMB MAP	FORMAT LIS