


```

MM      MM      SSSSSSSS  CCCCCCCC  PPPPPPPP  DDDDDDDD  EEEEEEEEE  FFFFFFFF
MM      MM      SSSSSSSS  CCCCCCCC  PPPPPPPP  DDDDDDDD  EEEEEEEEE  FFFFFFFF
MMMM    MMMM    SS        CC          PP        PP  DD        DD  EE          FF
MMMM    MMMM    SS        CC          PP        PP  DD        DD  EE          FF
MM      MM      SS        CC          PP        PP  DD        DD  EE          FF
MM      MM      SS        CC          PP        PP  DD        DD  EE          FF
MM      MM      SSSSSS    CC          PPPPPPPP  DD        DD  EEEEEEEEE  FFFFFFFF
MM      MM      SSSSSS    CC          PPPPPPPP  DD        DD  EEEEEEEEE  FFFFFFFF
MM      MM      SS        CC          PP        PP  DD        DD  EE          FF
MM      MM      SS        CC          PP        PP  DD        DD  EE          FF
MM      MM      SS        CC          PP        PP  DD        DD  EE          FF
MM      MM      SSSSSSSS  CCCCCCCC  PP        PP  DDDDDDDD  EEEEEEEEE  FF
MM      MM      SSSSSSSS  CCCCCCCC  PP        PP  DDDDDDDD  EEEEEEEEE  FF

```

```

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

```

```

MM      MM      AAAAAA  RRRRRRRR
MM      MM      AAAAAA  RRRRRRRR
MMMM    MMMM    AA      AA  RR      RR
MMMM    MMMM    AA      AA  RR      RR
MM      MM      AA      AA  RR      RR
MM      MM      AA      AA  RR      RR
MM      MM      AA      AA  RRRRRRRR
MM      MM      AA      AA  RRRRRRRR
MM      MM      AAAAAAAAAA  RR  RR
MM      MM      AAAAAAAAAA  RR  RR
MM      MM      AA      AA  RR      RR
MM      MM      AA      AA  RR      RR
MM      MM      AA      AA  RR      RR
MM      MM      AA      AA  RR      RR

```

.TITLE MSCP_MACROS
.IDENT 'V04=000'

```

*****
*
* COPYRIGHT (c) 1978, 1980, 1982, 1984 BY
* DIGITAL EQUIPMENT CORPORATION, MAYNARD, MASSACHUSETTS.
* ALL RIGHTS RESERVED.
*
* THIS SOFTWARE IS FURNISHED UNDER A LICENSE AND MAY BE USED AND COPIED
* ONLY IN ACCORDANCE WITH THE TERMS OF SUCH LICENSE AND WITH THE
* INCLUSION OF THE ABOVE COPYRIGHT NOTICE. THIS SOFTWARE OR ANY OTHER
* COPIES THEREOF MAY NOT BE PROVIDED OR OTHERWISE MADE AVAILABLE TO ANY
* OTHER PERSON. NO TITLE TO AND OWNERSHIP OF THE SOFTWARE IS HEREBY
* TRANSFERRED.
*
* THE INFORMATION IN THIS SOFTWARE IS SUBJECT TO CHANGE WITHOUT NOTICE
* AND SHOULD NOT BE CONSTRUED AS A COMMITMENT BY DIGITAL EQUIPMENT
* CORPORATION.
*
* DIGITAL ASSUMES NO RESPONSIBILITY FOR THE USE OR RELIABILITY OF ITS
* SOFTWARE ON EQUIPMENT WHICH IS NOT SUPPLIED BY DIGITAL.
*
*****

```

FACILITY:

MSCP (Mass Storage Controll Protocol) Emulator

ABSTRACT:

AUTHOR: Kerbey T. Altmann, May 1983

MODIFIED BY:

- V03-003 DWT0237 David W. Thiel 21-Aug-1984
Add reference count field to HQB. Add queue linkage to \$HQBDEF. Add HQB queue header to \$MSUDEF. Add MSUSW MAX PKT to \$MSUDEF as synonym (and replacement for) MSUSQ_MIN PKT. Put some extra space in each structure. Add HQBSQ_PENDING to hold CDRPs pending MAP deallocation.
- V03-002 KTA3104 Kerbey T. Altmann 28-Feb-1984
More new fields for shadowing.
- V03-001 KTA3081 Kerbey T. Altmann 15-Sep-1983
Add new fields for shadowing and controller timeout.

--
: Host que block

```

:
      .MACRO $HQBDEF,$SGBL
      $DEFINI HQB,$SGBL

$DEF HQBSL_FLINK      .BLKL      ; Linkage to tie HQB's to MSUSQ_HQBLIST
$DEF HQBSL_BLINK     .BLKL
$DEF HQBSW_SIZE      .BLKW
$DEF HQBSB_TYPE      .BLKB
$DEF HQBSB_PORT      .BLKB
      .BLKL
$DEF HQBSL_UNIT_ONLN .BLKL      ; Bit map of units host has online
$DEF HQBSL_CDT       .BLKL      ; Pointer to CDT for connection
$DEF HQBSW_CNT_FLGS  .BLKW
$DEF HQBSW_HST_TMO   .BLKW      ; Host time out period
$DEF HQBSW_USE_FRAC  .BLKW      ; Fraction of resources for this host
$DEF HQBSB_VEC       .BLKB
$DEF HQBSB_FLAG      .BLKB
$SEQU HQBS$TIME      8
$DEF HQBSQ_TIME      .BLKQ      ; Time ONLINE command issued
$DEF HQBSW_NUM_QUE   .BLKW
$DEF HQBSW_MAX_QUE   .BLKW
$DEF HQBSW_REF_C     .BLKW      ; Count of outstanding packets
      .BLKW 1
$DEF HQBSQ_PENDING   .BLKQ      ; CDRP's pending UNMAP after disconnect
      .BLKL 4      ; Spare
$DEF HQBSC_LEN
$DEF HQBSK_LEN

      $DEFEND HQB,$SGBL,DEF
      .ENDM $HQBDEF

```

```

:
: Unit que block
:

```

```

      .MACRO $UQBDEF,$SGBL
      $DEFINI UQB,$SGBL

$DEF UQBSL_SHDW_FL   .BLKL
$DEF UQBSL_SHDW_BL   .BLKL
$DEF UQBSW_SIZE      .BLKW
$DEF UQBSB_TYPE      .BLKB
      .BLKB 1
$DEF UQBSB_HOST_CNT  .BLKB      ; Number of hosts having unit online
$DEF UQBSB_CMD_PEND  .BLKB
$DEF UQBSW_STATUS    .BLKW      ; Status of the unit
$DEF UQBSW_MULT_UNT  .BLKW      ; Special MSCP kludge
$DEF UQBSW_UNT_FLGS  .BLKW      ; Unit flags
      .BLKL 1
$SEQU UQB$S_UNIT_ID  8
$DEF UQB$Q_UNIT_ID   .BLKQ      ; Unit id
$DEF UQBSL_MEDIA_ID  .BLKL      ; Media type id

```

```

$DEF UQBSW_SHDW_UNT .BLKW ; Shadow unit
$DEF UQBSW_SHDW_STS .BLKW
$DEF UQBSW_UNIT .BLKW
$DEF UQBSB_SLOT .BLKB
$DEF UQBSB_FLAGS .BLKB 1
$DEF UQBSL_VOL_SER .BLKL ; Volume serial
$DEF UQBSL_UCB .BLKL ; Pointer to unit's UCB
$DEF UQBSL_HOST_ONLN .BLKL ; Hosts online
$DEF UQBS_NAME 16
$DEF UQBST_NAME .BLKB 16
$DEF UQBSL_MAXBLOCK .BLKL ; Maximum LBN size
$DEF UQBSL_START_LBN .BLKL ; Starting LBN if logical disk
$DEF UQBSW_NUM_QOE .BLKW
$DEF UQBSW_MAX_QUE .BLKW
$DEF UQBSW_NUM_OPS .BLKW
$DEF UQBSW_MAX_OPS .BLKW
$DEF UQBSL_FENCEL .BLKL
$DEF UQBSL_FENCEH .BLKL
$DEF UQBSL_CDRP_FL .BLKL
$DEF UQBSL_CDRP_BL .BLKL
$DEF UQBSQ_BLOCKQ .BLKQ
$DEF UQBSQ_SHQ .BLKQ
$DEF UQBSL_SHDW_LOW
$DEF UQBSL_SHDW_MST .BLKL
$DEF UQBSW_NUM_BLK .BLKW
$DEF UQBSW_MAX_BLK .BLKW
$DEF UQBSQ_UNITQ .BLKQ
$DEF UQBSL_CPY_CDRP .BLKL
.BLKL 4

```

```

$DEF UQBSC_LEN
$DEF UQBSK_LEN

```

```

$DEF UQBSV_CIP 0
$DEF UQBSM_CIP 1
$DEF UQBSV_BLOCKED 1
$DEF UQBSM_BLOCKED 2
$DEF UQBSV_2PASS 2
$DEF UQBSM_2PASS 4
$DEF UQBSV_CMDPEND 3
$DEF UQBSM_CMDPEND 8
$DEF UQBSV_SEQ 4
$DEF UQBSM_SEQ 16
$DEF UQBSV_RIP 5
$DEF UQBSM_RIP 32

```

```
$DEFEND UQB,$GBL,DEF
```

```
.ENDM $UQBDEF
```

```

:
: Communication area
:

```

```
.MACRO SMSUDEF,$GBL
```

\$DEFINI MSU,\$GBL

```

$EQU MSUSV_START      31      ; State flag
$EQU MSUSK_UNIT_SIZ   4        ; LOG2 of MAX UNIT
$EQU MSUSK_MAX_UNIT   16      ; Maximum number of units
$EQU MSUSK_HOST_SIZ   4        ; LOG2 of MAX HOST
$EQU MSUSK_MAX_HOST   16      ; Maximum number of simultaneous hosts
$EQU MSUSK_MAX_OPC    64      ; Maximum MSCP opcode
$EQU MSUSK_AC_START   1        ; START ACTION
$EQU MSUSK_AC_STOP    2        ; STOP ACTION
$EQU MSUSK_AC_ADD     3        ; ADD ACTION
$EQU MSUSK_AC_REM     4        ; REMOVE ACTION
$EQU MSUSK_AC_DISC    5        ; DISCONNECT ACTION
$EQU MSCPSR_MIN_SIZE  12      ; Minimum MSCP packet size

$DEF MSUSL_D1          .BLKL
$DEF MSUSL_D2          .BLKL
$DEF MSUSW_SIZE       .BLKW
$DEF MSUSB_TYPE       .BLKB
$DEF MSUSB_SUBTYPE    .BLKB
$DEF MSUSL_P1         .BLKL
$DEF MSUSL_P2         .BLKL
$DEF MSUST_NAME       .BLKB 16
$DEF MSUSB_VEC        .BLKB 28
$DEF MSUSL_STATE      .BLKL
$DEF MSUSW_PACKET     .BLKW      ; Number of credits and maximum packets per host
$DEF MSUSW_INI_PKT    .BLKW      ; Number of allocated packets
$DEF MSUSW_NUM_PKT    .BLKW      ; Number of free packets
$DEF MSUSW_MIN_PKT    .BLKW      ; Obsolete name for next field
$DEF MSUSW_MAX_PKT    .BLKW      ; Maximum number of free packets
$DEF MSUSW_INI_HOST   .BLKW
$DEF MSUSW_NUM_HOST   .BLKW
$DEF MSUSL_BUFF_HEAD .BLKL      ; Head of the buffer pool
$DEF MSUSL_MAX_BUF    .BLKL
$DEF MSUSL_SMALL      .BLKL
$DEF MSUSL_FRACTION   .BLKL
$DEF MSUSW_NUM_QUE    .BLKW
$DEF MSUSW_MAX_QUE    .BLKW

$DEF MSUSL_CDSV_SIZE  .BLKL
$DEF MSUSL_CDRP_SAVE  .BLKL
$DEF MSUSQ_QUEUE      .BLKL      ; Start of queues
$DEF MSUSL_CDRP_LIST .BLKL
$DEF MSUSL_MEM_WAIT   .BLKL 1
$DEF MSUSL_QUEB_LIST .BLKL 1
$DEF MSUSL_QUEB_LIST .BLKL 1
$DEF MSUSL_QUEB_LIST .BLKL 1
$EQU MSUSC_NUMQUE     3          ; Number of queues
$DEF MSUSL_HOST_DSBL .BLKL
$DEF MSUSL_HOST_DSBL .BLKL 1
$DEF MSUSL_UNIT_VEC   .BLKL MSUSK_MAX_UNIT
$DEF MSUSL_HOST_VEC   .BLKL MSUSK_MAX_HOST
$DEF MSUSL_HOST_VEC   .BLKL MSUSK_MAX_HOST
$DEF MSUSL_HOST_VEC   .BLKL MSUSK_MAX_HOST
$DEF MSUSQ_CTRL_ID    .BLKQ

```


The image displays a 15x15 grid of small, rectangular panels. Each panel contains technical information, likely related to VAX/VMS system components. The panels are arranged in a regular grid pattern. Some panels have larger, bolded text labels that are more prominent than the others. These labels include: 'MSCP' (located in the 4th row, 12th column), 'MSCP MAP' (located in the 5th row, 12th column), 'ADDUNIT LIS.' (located in the 5th row, 13th column), 'MSCP LIS' (located in the 6th row, 13th column), 'MPWATT LIS' (located in the 8th row, 13th column), 'MPTIMER LIS' (located in the 11th row, 13th column), 'XDELTA LIS' (located in the 11th row, 14th column), and 'MSCPDEF MAR' (located in the 14th row, 12th column). The background of each panel is dark, and the text is light-colored, making the labels stand out.