

[illegible]

```

RRRRRRRR      EEEEEEEEEEE      QQQQQQ
RRRRRRRR      EEEEEEEEEEE      QQQQQQ
RR              EE              QQ              QQ
RR              EE              QQ              QQ
RR              EE              QQ              QQ
RR              EE              QQ              QQ
RRRRRRRR      EEEEEEEEEEE      QQ              QQ
RRRRRRRR      EEEEEEEEEEE      QQ              QQ
RR      RR      EE              QQ              QQ
RR      RR      EE              QQ      QQ      QQ
RR              EE              QQ              QQ
RR              EE              QQ              QQ
RR              EE              QQ              QQ
RR              EEEEEEEEEEE      QQQQ      QQ
RR              EEEEEEEEEEE      QQQQ      QQ

```


SHODEVDEF.REQ - SHOW DEVICES Common Definitions

Version 'V04-000'

```
*****
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FACILITY: SHOW utility.

ABSTRACT:

This file contains the common definitions for SHOW DEVICES.

ENVIRONMENT:

VAX native, user mode.

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AUTHOR: Gerry Smith

CREATION DATE: 29-Jun-1982

MODIFIED BY:

V03-013	CWH3013	CW Hobbs	25-Jul-1984
	Add state bits and cells to scratch area		
V03-012	AEW0001	Anne E. Warner	10-Jul-1984
	Add flag bit devi\$V_served for qualifier /SERVED.		
V03-011	CWH3011	CW Hobbs	12-Apr-1984
	Add some more state bits		
V03-010	CWH3010	CW Hobbs	22-Mar-1984
	Add D_V_REMOTE_MOUNTS bit to tell if the device is mounted on remote nodes		

V03-009 CWH3009 CW Hobbs 3-Mar-1984
Add field to permit sorting by device name, also
cache name field

V03-008 CWH3008 CW Hobbs 27-Feb-1984
Add more displays for dual-path devices. Align the
fields on longword boundaries for the most part.

V03-006 TCM0001 Trudy Matthews 10-Oct-1983
Add displays for dual-path devices.

V03-005 GAS0149 Gerry Smith 28-Jun-1983
Use IOC\$CVT_DEVNAM to get the device name.

V03-004 GAS0135 Gerry Smith 18-May-1983
Move MCOUNT so that it doesn't clobber journal data.

V03-003 GAS0110 Gerry Smith 28-Feb-1983
Add support for cluster devices.

V03-002 GAS0109 Gerry Smith 15-Feb-1983
Add D_T_GRPNAM, the tape shadow group name, as well as
D_L_FIL_MXVBN, the disk journal file size,
D_L_JNL_CHAR, the VCB journal characteristics, and
D_T_JNL_SPL, the "journal spooled" byte.

V03-001 GAS0107 Gerry Smith 11-Feb-1983
Add support for journals.

..


```
!
! Define the flags longword bits.
```

```
MACRO
  dev$ allocated      =      0, 0, 1, 0%,      ! /ALLOCATED
  dev$ full          =      0, 1, 1, 0%,      ! /FULL
  dev$ mounted       =      0, 2, 1, 0%,      ! /MOUNTED
  dev$ files         =      0, 3, 1, 0%,      ! /FILES
  dev$ system        =      0, 4, 1, 0%,      ! /SYSTEM
  dev$ user          =      0, 5, 1, 0%,      ! /NOSYSTEM
  dev$ windows       =      0, 6, 1, 0%,      ! /WINDOWS
  dev$ perm          =      0, 7, 1, 0%,      ! /PERM (terminal)
  dev$ printer       =      1, 0, 1, 0%,      ! SHOW PRINTER was invoked
  dev$ term          =      1, 1, 1, 0%,      ! SHOW TERMINAL
  dev$ tape          =      1, 2, 1, 0%,      ! SHOW MAGTAPE
  dev$ header        =      1, 3, 1, 0%,      ! to show header printed
  dev$ allocs        =      1, 4, 1, 0%,      ! the node field is a longword allocation class
  dev$ displayed     =      1, 5, 1, 0%,      ! A device was actually displayed
  dev$ served        =      1, 6, 1, 0%,      ! /SERVED
```

```
!
! Define macros to describe the fields in the scratch area.
```

```
COMPILETIME
  byte_offset = 0,
  width = 0,
  length = 0;
```

```
MACRO
  define each field [item_name, item_tag, item_length] =
  %ASSIGN (byte_offset, byte_offset + length)
  %IF %IDENTICAL (item_tag, q)
  %THEN
    %ASSIGN (width, 0)
    %ASSIGN (length, 8) %FI
  %IF %IDENTICAL (item_tag, l)
  %THEN
    %ASSIGN (width, 32)
    %ASSIGN (length, 4) %FI
  %IF %IDENTICAL (item_tag, w)
  %THEN
    %ASSIGN (width, 16)
    %ASSIGN (length, 2) %FI
  %IF %IDENTICAL (item_tag, b)
  %THEN
    %ASSIGN (width, 8)
    %ASSIGN (length, 1) %FI
  %IF %IDENTICAL (item_tag, t)
  %THEN
    %ASSIGN (width, 8)
    %ASSIGN (length, %NUMBER(item_length))
    LITERAL %NAME('d_s_', item_name) = length; %FI

  MACRO %NAME('d ', item_tag, ' ', item_name) =
    %QUOTE %EXPAND %NUMBER (byte_offset),
```

```
0,  
%QUOTE %EXPAND %NUMBER (width),  
0 %QUOTE % %QUOTE ; %,  
define fields (base) =  
%IF NOT %IDENTICAL(base, 0)  
%THEN %ASSIGN(byte_offset, %NUMBER(base)) %FI  
%ASSIGN (length, 0)  
define_each_field(%REMAINING)%;
```


define_fields	(0,			Start at beginning
ucb,	l,,			Device UCB address (unique ID) and
				link field for sorting devices
				** Sort routine assumes this is the first item!
bits,	w,,			Sundry status bits (defined later)
devlen,	b,,			Device name length
fill_1,	b,,			Fill for alignment
device,	t,,	20,		Device name
host_name,	t,,	16,		Host name (ascii)
host_type,	l,,			Host type (V780,V750,HS50) (primary)
host2_name,	t,,	16,		Host name
host2_type,	l,,			Host type (V780,V750,HS50)
sort_name,	t,,	16,		Name in format for sorting
allocs,	l,,			Host allocation class
ownuic,	l,,			Owner UIC
pid,	l,,			Owner PID
prcnam,	t,,	16,		Owner process name
devchar,	l,,			Device characteristics
devchar2,	l,,			2nd longword of chars.
devclass,	b,,			Device class
devtype,	b,,			Device type
devbufsiz,	w,,			Default buffer size
devdepend,	l,,			Dev-dependent longword #1
devdepnd2,	l,,			Dev-dependent longword #2
vprot,	w,,			Volume protection
refc,	w,,			Reference count
sts,	l,,			Status
opcnt,	l,,			Number of operations completed
devsts,	w,,			Device status
errcnt,	w,,			Number of errors
maxblock,	l,,			UCSL_MAXBLOCK for disks
orb_flags,	b,,			ORBSB_FLAGS byte
conf,	b,,			More data?
status,	b,,			Volume status (in the VCB)
trans,	w,,			Transaction count
aqbtype,	b,,			Type of ACP
acpnam,	t,,	24,		ACP name or XQP cache name
rvn,	w,,			Relative volume number
volnam,	t,,	20,		Volume label
mcount,	w,,			Number of /SHARE mounters
cluster,	w,,			Cluster size
extend,	w,,			Default extend quantity
free,	l,,			Number of free blocks
maxfiles,	l,,			Maximum number of files
window,	b,,			Window size
lru_lim,	b,,			LRU limit
status2,	b,,			Second status byte
				** following two fields assumed to be adjacent
retainmin,	q,,			Minimum retention period
retainmax,	q,,			Maximum retention period
fidsize,	w,,			FID cache size
extsize,	w,,			Extent cache size
extlimit,	w,,			Extent cache limit (in percent/10)
exttotal,	l,,			Extent cache current blocks
quosize,	w,,			Quota cache size
bfrcnt,	w,,);			Number of cache buffers

! Overlay two words, the group and member parts of the owner UIC.

```
define_fields ($BYTEOFFSET(d_l_ownuic),
              group,      w,,
              member,     w,,);
```

! Overlay disk geometry on devdepend longword (since that is what devdepend is used for in disks)

```
define_fields ($BYTEOFFSET(d_l_devdepend),
              sectors,    b,,
              tracks,     b,,
              cylinders,  w,,);
```

! Overlay the unit number on the end of the sort field (where it will be used)

```
LITERAL unit_off = $BYTEOFFSET(d_t_sort_name)+14;
define_fields (unit_off,
              unit,      w,,);
```

! For a spooled device, capture the intermediate device name as well as the name of the queue to which it is spooled.

```
define_fields ($BYTEOFFSET(d_b_status),
              intdev,    t,    20,    ! Intermediate device name
              intlen,    l,,      ! and length
              qname,     t,    20);   ! Queue name
```

! For magtapes, the maximum recordsize in bytes

```
define_fields ($BYTEOFFSET(d_w_cluster),
              recordsz,  w,,);
```

! For journals, start overlaying at the W_CLUSTER part of the record.

```
define_fields ($BYTEOFFSET(d_w_cluster),
              grpnam,    t,    14,    ! Shadow group name
              fil_mxvbn, l,,      ! Disk file size
              jnl_char,  l,,      ! VCB journal characteristics
              jnl_mask,  l,,      ! Journal mask
              jnl_segno, l,,      ! Maximum sequence number
              jnl_asid,  l,,      ! Highest assigned seq. no.
              jnl_quot,  l,,      ! Journal quota (RU only)
              jnl_refc,  l,,      ! Channel count
              jnl_trefc, l,,      ! Node count
              jnl_id,    w,,      ! Journal ID
              jnl_char,  w,,      ! Characteristics word
              amod,      b,,      ! Access mode
              jnl_cop,   w,,      ! Number of copies
```



```
jnl_spl,      b,,);      ! Tape file is spooled
jnl_avl,      b,,);      ! Number of journals available
```

```
! Determine the maximum length of the data record.
```

```
LITERAL d_k_length = $BYTEOFFSET(d_w_quosize) + $FIELDWIDTH(d_w_quosize);
```

```
! Define the bits word bits.
```

```
COMPILETIME
```

```
    byt_off = $BYTEOFFSET (d_w_bits);
```

```
MACRO
```

d_v_displayed	= byt_off, 0, 1, 0%;	! Device has been displayed
d_v_host_avail	= byt_off, 1, 1, 0%;	! Host is available
d_v_host2_avail	= byt_off, 2, 1, 0%;	! Alternate host is available
d_v_remote_device	= byt_off, 3, 1, 0%;	! Device is served by remote host
d_v_shadow_master	= byt_off, 4, 1, 0%;	! Device is master for a shadow set
d_v_cachename	= byt_off, 5, 1, 0%;	! D_T_ACPNAM is really the cache name
d_v_local_mount	= byt_off, 6, 1, 0%;	! Device is mounted on the local node
d_v_remote_mounts	= byt_off, 7, 1, 0%;	! Device is mounted on other nodes
d_v_remote_all	= byt_off, 8, 1, 0%;	! Device is allocated on remote node
d_v_acl_present	= byt_off, 9, 1, 0%;	! Device has an access control list

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AH-BT13A-SE
VAX/VMS V4.0

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