



```

DDDDDDDD      IIIIII      SSSSSSSS  PPPPPPPP  LL      YY      YY  DDDDDDDD  EEEEEEEEEE  FFFFFFFFFF
DDDDDDDD      IIIIII      SSSSSSSS  PPPPPPPP  LL      YY      YY  DDDDDDDD  EEEEEEEEEE  FFFFFFFFFF
DD      DD      II      SS      PP      PP  LL      YY      YY  DD      DD  EE      FF
DD      DD      II      SS      PP      PP  LL      YY      YY  DD      DD  EE      FF
DD      DD      II      SS      PP      PP  LL      YY      YY  DD      DD  EE      FF
DD      DD      II      SS      PP      PP  LL      YY      YY  DD      DD  EE      FF
DD      DD      II      SS      PP      PP  LL      YY      YY  DD      DD  EE      FF
DD      DD      II      SS      PP      PP  LL      YY      YY  DD      DD  EE      FF
DD      DD      II      SS      PP      PP  LL      YY      YY  DD      DD  EE      FF
DD      DD      II      SS      PP      PP  LL      YY      YY  DD      DD  EE      FF
DD      DD      II      SS      PP      PP  LL      YY      YY  DD      DD  EE      FF
DDDDDDDD      IIIIII      SSSSSSSS  PPPPPPPP  LL      YY      YY  DDDDDDDD  EEEEEEEEEE  FFFFFFFFFF
DDDDDDDD      IIIIII      SSSSSSSS  PPPPPPPP  LL      YY      YY  DDDDDDDD  EEEEEEEEEE  FFFFFFFFFF

```

```

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
SS      DD      DD      LL
SSSSSSSS      DDDDDDDD      LLLLLLLLLL
SSSSSSSS      DDDDDDDD      LLLLLLLLLL

```

{  
{ IDENT = 'V04-000'  
{

{.....  
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{\*\*  
{ FACILITY: DIRECTORY  
{

{ ABSTRACT:  
{

{ This module contains the definition for the display information  
{ block. This is the block that contains all of the information  
{ that may be displayed about a file.  
{

{ ENVIRONMENT:  
{

{ VAX/VMS operating system, unprivileged user mode utilities  
{

{--  
{ AUTHOR: L. Mark Pilant CREATION DATE: 4-Mar-1983  
{

{ MODIFIED BY:  
{

{ V03-007 LMP0211 L. Mark Pilant, 10-Mar-1984 12:47  
{ Modify the display block to more accurately track the  
{ information now obtained directly from the disk ACP.  
{

{ V03-006 LMP0182 L. Mark Pilant, 11-Jan-1984 12:38  
{ Add flags to indicate what selection option was chosen.  
{

{ V03-005 DAS0002 David Solomon 01-Aug-1983  
{ Max journal name went from 12 to 16.  
{

(	V03-004	DAS0001	David Solomon	29-Jul-1983
(		XABSM_RUA is now	XABSM_ONLY_RU.	
(	V03-003	LMP0119	L. Mark Pilant,	15-Jun-1983 9:26
(		Add support for	identifiers.	
(	V03-002	LMP0108	L. Mark Pilant,	28-Apr-1983 12:21
(		Add support for	RMS journal names.	
(	V03-001	LMP0100	L. Mark Pilant,	14-Apr-1983 11:50
(		Misc fixups.		
(..				

```
module $DISPLAYDEF;
```

```
/*
/* Define the display information block. This block is filled with all of
/* the information needed to create a full directory display on the selected
/* file. With the exception of network files and indexed files, all of the
/* information about the file is obtained from the disk ACP. Network files
/* and indexed files are handled by RMS. Because the primary path is the disk
/* ACP, the display block should parallel the ODS-2 file header structures as
/* closely as possible.
/*
```

```
aggregate DISPLAYDEF structure prefix DIR_;
```

```
{
{ The following describe the file specification
```

```
{
STATUS longword unsigned; /* File OPEN/QIO status
FLAGS structure longword unsigned; /* Miscellaneous flags
  NOPRIV bitfield mask; /* No privilege to read info
  SQD bitfield mask; /* True if seq. device (magtapes)
end FLAGS;
DVI character dimension 16; /* Device ident.
FNS byte unsigned; /* File name size
FILENAME character dimension 256; /* File name buffer
NODE byte unsigned; /* Filespec nodename length
DEV byte unsigned; /* Filespec device length
DIR byte unsigned; /* Filespec directory length
VER byte unsigned; /* Filespec version length
VERLIMIT word unsigned; /* File version limit
ACLENGTH longword unsigned; /* Size of file's ACL
```

```
{
{ The following are obtained from the file header ($FHxDEF)
```

```
{
FID structure fill; /* file ID
  FID_NUM word unsigned; /* file number
  FID_SEQ word unsigned; /* file sequence number
  FID_RVN word unsigned; /* relative volume number
end FID;
RECATTR structure; /* file record attributes
  RTYPE structure byte unsigned; /* record type
  RTYPE bitfield length 4; /* record type subfield
  constant(
    UNDEFINED /* undefined record type
    . FIXED /* fixed record type
    . "VARIABLE" /* variable length
    . VFC /* variable + fixed control
    . STREAM /* RMS-11 (DEC traditional) stream format
    . STREAMLF /* LF-terminated stream format
    . STREAMCR /* CR-terminated stream format
  ) equals 0 increment 1 prefix DIR_ tag C;
FILEORG bitfield length 4; /* file organization
  constant(
    SEQUENTIAL /* sequential organization
    . RELATIVE /* relative organization
    . INDEXED /* indexed organization
    . DIRECT /* direct organization
```

```

) equals 0 increment 1 prefix DIR_ tag C;
end RTYPE;
RATTRIB structure byte unsigned; /* record attributes
FORTRANCC bitfield mask; /* Fortran carriage control
IMPLIEDCC bitfield mask; /* implied carriage control
PRINTCC bitfield mask; /* print file carriage control
NOSPAN bitfield mask; /* no spanned records
end RATTRIB;
RSIZE word unsigned; /* record size in bytes
HIBLK structure longword unsigned; /* highest allocated VBN
HIBLKH word unsigned; /* high order word
HIBLKL word unsigned; /* low order word
end HIBLK;
EFBLK structure longword unsigned; /* end of file VBN
EFBLKH word unsigned; /* high order word
EFBLKL word unsigned; /* low order word
end EFBLK;
FFBYTE word unsigned; /* first free byte in EFBLK
BKTSIZE byte unsigned; /* bucket size in blocks
VFCSIZE byte unsigned; /* size in bytes of fixed length control for VFC records
MAXREC word unsigned; /* maximum record size in bytes
DEFEXT word unsigned; /* default extend quantity
GBC word unsigned; /* global buffer count
FILL_1 word dimension 4 fill; /* spare
VERSIONS word unsigned; /* default version limit for directory file
end RECATTR;
FILECHAR structure longword unsigned; /* file characteristics
FILL_1 bitfield fill; /* reserved
NOBACKUP bitfield mask; /* file is not to be backed up
WRITEBACK bitfield mask; /* file may be write-back cached
READCHECK bitfield mask; /* verify all read operations
WRITCHECK bitfield mask; /* verify all write operations
CONTIGB bitfield mask; /* keep file as contiguous as possible
LOCKED bitfield mask; /* file is deaccess locked
CONTIG bitfield mask; /* file is contiguous
FILL_2 bitfield length 3 fill; /* reserved
BADAACL bitfield mask; /* ACL is invalid
SPOOL bitfield mask; /* intermediate spool file
DIRECTORY bitfield mask; /* file is a directory
BADBLOCK bitfield mask; /* file contains bad blocks
MARKDEL bitfield mask; /* file is marked for delete
NOCHARGE bitfield mask; /* file space is not to be charged
ERASE bitfield mask; /* erase file contents before deletion
end FILECHAR;
ACC MODE byte unsigned; /* least privileged access mode
FILEOWNER structure longword unsigned; /* file owner UIC
UICMEMBER word unsigned; /* UIC member number
UICGROUP word unsigned; /* UIC group number
end UIC;
FILEPROT word unsigned; /* file protection
JOURNAL structure word unsigned;
ONLY RU bitfield mask; /* file is accessible only in recovery unit
RUJNL bitfield mask; /* enable recovery unit journal
BIJNL bitfield mask; /* enable before image journal
AIJNL bitfield mask; /* enable after image journal
ATJNL bitfield mask; /* enable audit trail journal

```

```

    NEVER RU bitfield mask;          /* file is never accessible in recovery unit
end JOURNAL;
HIGHWATER longword unsigned;       /* high-water mark in file
CLASS_PROT structure;              /* security classification mask
    FILL 5 byte dimension 20 fill;  /* see structure in $CLSDEF
end CLASS_PROT;

```

```

{
{ The following are obtained from the file header ident area ($FIXDEF)
{

```

```

    REVISION word unsigned;          /* revision number (binary)
    CREATE structure quadword unsigned; /* Creation date
        CDT0 longword unsigned;
        CDT4 longword unsigned;
    end CREATE;
    REVDATA structure quadword unsigned; /* Revision date
        RDT0 longword unsigned;
        RDT4 longword unsigned;
    end REVDATA;
    EXPDATE structure quadword unsigned; /* Expiration date
        EDT0 longword unsigned;
        EDT4 longword unsigned;
    end EXPDATE;
    BAKDATE structure quadword unsigned; /* Backup date
        BDT0 longword unsigned;
        BDT4 longword unsigned;
    end BAKDATE;

```

```

{
{ The following are obtained from RMS for indexed or relative files.
{

```

```

    MRN longword unsigned;          /* Maximum record number
    NOAREAS byte unsigned;          /* Number of areas in idx files
    NOKEYS byte unsigned;           /* Number of keys (ISAM only)
    PVN word unsigned;              /* Prologue version number

```

```

{
{ The following are obtained from the file's ACL.
{

```

```

    JNL1 union fill;
        AI JNLNAME character dimension 17; /* AI journal name
        JNC2 structure fill;
            AI_SIZE byte unsigned;
            AI_NAME character dimension 16;
        end JNC2;
    end JNL1;
    JNL3 union fill;
        BI JNLNAME character dimension 17; /* BI journal name
        JNC4 structure fill;
            BI_SIZE byte unsigned;
            BI_NAME character dimension 16;
        end JNC4;
    end JNL3;
    JNL5 union fill;
        AT JNLNAME character dimension 17; /* AT journal name
        JNC6 structure fill;
            AT_SIZE byte unsigned;
            AT_NAME character dimension 16;
        end JNC6;

```

end JNL5;

constant 'LENGTH' equals . prefix DIR\_ tag K;  
constant 'LENGTH' equals . prefix DIR\_ tag C;

end DISPLAYDEF;

end\_module \$DISPLAYDEF;





```
module $DIRQUALDEF;
```

```
/*
/* Define the flags needed to determine what qualifiers were given on the
/* command line.
/*
```

```
aggregate QUALDEF union prefix DIR_;
```

```
QUAL BITS structure fill;
```

```
QUAL_ACL bitfield: /* /ACLS
QUAL_BRIE bitfield: /* /BRIEF
QUAL_COLU bitfield: /* /COLUMN
QUAL_DATE bitfield: /* /DATE
DATE_CRE bitfield: /* /DATE=CREATED
DATE_EXP bitfield: /* /DATE=EXPIRED
DATE_MOD bitfield: /* /DATE=MODIFIED
DATE_BAK bitfield: /* /DATE=BACKUP
QUAL_FID bitfield: /* /FILE_ID
QUAL_FULL bitfield: /* /FULL
QUAL_GRAN bitfield: /* /GRAND TOTAL
QUAL_HEAD bitfield: /* /HEADING
QUAL_OUTP bitfield: /* /OUTPUT
QUAL_OWNE bitfield: /* /OWNER
QUAL_PRIN bitfield: /* /PRINTER
QUAL_PROT bitfield: /* /PROTECTION
QUAL_SECU bitfield: /* /SECURITY
SELE_ACL bitfield: /* /SELECT=ACL
SELE_SIZE bitfield: /* /SELECT=SIZE
QUAL_SIZE bitfield: /* /SIZE
SIZE_ALL bitfield: /* /SIZE=ALL
SIZE_ALLO bitfield: /* /SIZE=ALLOCATION
SIZE_USED bitfield: /* /SIZE=USED
QUAL_TOTL bitfield: /* /TOTAL
QUAL_TRAI bitfield: /* /TRAILING
QUAL_VERS bitfield: /* /VERSIONS
QUAL_WIDT bitfield: /* /WIDTH
WIDT_DISP bitfield: /* /WIDTH=DISPLAY:n
WIDT_FILE bitfield: /* /WIDTH=FILENAME:n
WIDT_OWNE bitfield: /* /WIDTH=OWNER:n

COMM_QUAL bitfield: /* One of the common qualifiers seen
COLU_DEF bitfield: /* Column count defaulted
NEED_FHC bitfield: /* Need the FHC XAB
NEED_DAT bitfield: /* Need the DAT XAB
NEED_PRO bitfield: /* Need the PRO XAB
NEED_SUM bitfield: /* Need the SUM XAB
NEED_JNL bitfield: /* Need the JNL XAB
FILE_FOUND bitfield: /* Files found to display
USE ID bitfield: /* Use identifiers
```

```
end QUAL BITS;
end QUALDEF;
```

```
end_module $DIRQUALDEF;
```



The image displays a grid of 100 terminal window screenshots, arranged in 10 rows and 10 columns. Each window shows a different system utility or data view. The windows are titled as follows:

- Row 1: DIFMSG LIS, [Title], [Title], [Title], [Title], [Title], [Title], [Title], [Title], [Title]
- Row 2: [Title], [Title], [Title], [Title], [Title], [Title], [Title], [Title], DIRECTORY LIS, [Title]
- Row 3: MAIN LIS, [Title], [Title], [Title], [Title], [Title], [Title], [Title], [Title], [Title]
- Row 4: [Title], [Title], [Title], [Title], [Title], [Title], [Title], [Title], [Title], [Title]
- Row 5: [Title], [Title], [Title], [Title], [Title], [Title], [Title], [Title], [Title], [Title]
- Row 6: [Title], [Title], [Title], [Title], [Title], [Title], [Title], [Title], [Title], [Title]
- Row 7: [Title], [Title], [Title], [Title], [Title], [Title], [Title], [Title], [Title], [Title]
- Row 8: [Title], [Title], [Title], [Title], [Title], [Title], [Title], [Title], [Title], [Title]
- Row 9: [Title], [Title], [Title], [Title], [Title], [Title], [Title], [Title], [Title], [Title]
- Row 10: [Title], [Title], [Title], [Title], [Title], [Title], [Title], [Title], [Title], [Title]

Other visible titles include: DIR, DIRECTORY MAP, DIRECTDEF REQ, OUTPUT LIS, DISPLYDEF SDI, and DIRECTMSG LIS.