```
RRRRRRRRRRR      UUU          UUU  NNN          NNN     000000000     FFFFFFFFFFFFFFF  FFFFFFFFFFFFFFF
RRRRRRRRRRRR     UUU          UUU  NNN          NNN     000000000     FFFFFFFFFFFFFFF  FFFFFFFFFFFFFFF
RRRRRRRRRRRR     UUU          UUU  NNN          NNN     000000000     FFFFFFFFFFFFFFF  FFFFFFFFFFFFFFF
RRR          RRR UUU          UUU  NNN          NNN  000         000  FFF              FFF
RRR          RRR UUU          UUU  NNN          NNN  000         000  FFF              FFF
RRR          RRR UUU          UUU  NNN          NNN  000         000  FFF              FFF
RRR          RRR UUU          UUU  NNNNNN       NNN  000         000  FFF              FFF
RRR          RRR UUU          UUU  NNNNNN       NNN  000         000  FFF              FFF
RRR          RRR UUU          UUU  NNNNNN       NNN  000         000  FFF              FFF
RRRRRRRRRRRR     UUU          UUU  NNN  NNN     NNN  000         000  FFFFFFFFFFFF     FFFFFFFFFFFF
RRRRRRRRRRRR     UUU          UUU  NNN  NNN     NNN  000         000  FFFFFFFFFFFF     FFFFFFFFFFFF
RRRRRRRRRRRR     UUU          UUU  NNN  NNN     NNN  000         000  FFFFFFFFFFFF     FFFFFFFFFFFF
RRR    RRR       UUU          UUU  NNN       NNNNNN  000         000  FFF              FFF
RRR    RRR       UUU          UUU  NNN       NNNNNN  000         000  FFF              FFF
RRR    RRR       UUU          UUU  NNN       NNNNNN  000         000  FFF              FFF
RRR       RRR    UUU          UUU  NNN          NNN  000         000  FFF              FFF
RRR       RRR    UUU          UUU  NNN          NNN  000         000  FFF              FFF
RRR       RRR    UUU          UUU  NNN          NNN  000         000  FFF              FFF
RRR          RRR UUUUUUUUUUUUUUU  NNN          NNN     000000000     FFF              FFF
RRR          RRR UUUUUUUUUUUUUUU  NNN          NNN     000000000     FFF              FFF
RRR          RRR UUUUUUUUUUUUUUU  NNN          NNN     000000000     FFF              FFF
RRR          RRR UUUUUUUUUUUUUUU  NNN          NNN     000000000     FFF              FFF
RRR          RRR UUUUUUUUUUUUUUU  NNN          NNN     000000000     FFF              FFF
```

```
_$2

Sym
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PER
PUT
RCO
RIN

RLI
RNO
RNO
RTY
SAV
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E 5

FILEID**FSPACK

```
FFFFFFFFFF    SSSSSSSS  PPPPPPPP      AAAAAA      CCCCCCCC  KK      KK
FFFFFFFFFF    SSSSSSSS  PPPPPPPP      AAAAAA      CCCCCCCC  KK      KK
FF          SS          PP      PP  AA      AA  CC          KK      KK
FF          SS          PP      PP  AA      AA  CC          KK      KK
FF          SS          PP      PP  AA      AA  CC          KK    KK
FF          SS          PP      PP  AA      AA  CC          KK    KK
FFFFFFFF      SSSSSS    PPPPPPPP    AA      AA  CC          KKKKKK
FFFFFFFF      SSSSSS    PPPPPPPP    AA      AA  CC          KKKKKK
FF                  SS  PP          AAAAAAAAAA  CC          KK    KK
FF                  SS  PP          AAAAAAAAAA  CC          KK    KK
FF                  SS  PP          AA      AA  CC          KK      KK      ....
FF                  SS  PP          AA      AA  CC          KK      KK      ....
FF          SSSSSSSS    PP          AA      AA    CCCCCCCC  KK      KK      ....
FF          SSSSSSSS    PP          AA      AA    CCCCCCCC  KK      KK      ....

RRRRRRRR    EEEEEEEEEE    QQQQQQ
RRRRRRRR    EEEEEEEEEE    QQQQQQ
RR      RR  EE          QQ      QQ
RR      RR  EE          QQ      QQ
RR      RR  EE          QQ      QQ
RR      RR  EE          QQ      QQ
RRRRRRRR    EEEEEEEE    QQ      QQ
RRRRRRRR    EEEEEEEE    QQ      QQ
RR RR       EE          QQ  QQ  QQ
RR RR       EE          QQ  QQ  QQ
RR    RR    EE          QQ    QQ
RR    RR    EE          QQ    QQ
RR      RR  EEEEEEEEEE    QQQQ  QQ
RR      RR  EEEEEEEEEE    QQQQ  QQ
```

```
Version:      'V04-000'
```



```
!++
! FACILITY:      DSR (Digital Standard RUNOFF) / DSRPLUS
!
! ABSTRACT:
!       Macros to manipulate FIXED_STRINGS: transportable, fixed-length
!       strings.
!
! ENVIRONMENT:   Transportable BLISS
!
! AUTHOR:        Rich Friday
!
! CREATION DATE: 1978
!
! MODIFIED BY:
!
!       002     KAD00002        Keith Dawson    07-Mar-1983
!               Global edit of all modules. Updated module names, idents,
!               copyright dates. Changed require files to BLISS library.
!--

!+
! FIXED_STRING is a structure that contains a string of an expected maximum
! length, plus additional locations to contain information related to the
! status of the string.
!-
STRUCTURE
        fixed_string[i;n=1]     =
                [4*%UPVAL + CH$ALLOCATION(N*%UPVAL)]
```

```
                (fixed_string - %UPVAL*( 1 - I) );
!+
! The following literals are names for the fields allocated above. These
! names are not to be used by a user.
!-
LITERAL
        FS__FCP         = 01,   ! CH$PTR to first character position.
        FS__NCP         = 02,   ! CH$PTR to next character position.
        FS__MAX         = 03,   ! Capacity of the counted string.
        FS__LEN         = 04;   ! Current length.

!+
! FS_ALLOCATE is used to allocate and initialize a fixed-length string.
!-
MACRO
    fs_allocate (fs_name,fs_maxl) =
        fs_name:fixed_string [fs_maxl]
        INITIAL (0,
                 0,
                 fs_maxl,
                 0)
    %;

!+
! Control information is accessed via the following macros.
!-
MACRO
    fs_start (fs_name) =
        fs_name [fs__fcp]
    %,

    fs_next (fs_name) =
        fs_name [fs__ncp]
    %,

    fs_maxsize (fs_name) =
        fs_name [fs__max]
    %,

    fs_length (fs_name) =
        fs_name [fs__len]
    %;

!+
! FS_INIT initializes a fixed-length string to the null string.
!-
MACRO
    fs_init (fs_name) =
        BEGIN
        fs_length (fs_name)     = 0;
        fs_start (fs_name)      = CH$PTR (fs_name [5]);
        fs_next (fs_name)       = .fs_start (fs_name);
        END
    %;

!+
```

```
! FS_WCHAR puts a character into the fixed-length string.
!-
MACRO
    fs_wchar (fs_name,khar)     =
        BEGIN
        CH$WCHAR_A (khar, fs_next (fs_name));           !Write character and advance pointer.
        fs_length (fs_name) = .fs_length (fs_name) + 1; !Bump total length count.
        END
    %;


!+
! FS_RCHAR gets a character from the fixed-length string.
!-
MACRO
    fs_rchar (fs_name,khar)     =
        BEGIN
        khar = CH$RCHAR_A (fs_next (fs_name));          !Read character and advance pointer.
        fs_length (fs_name) = .fs_length (fs_name) - 1; !Decrement remainder count.
        END
    %;

!                       End of FSPACK.REQ
```

CONVRT REQ
ECC REQ
FLIPRECS REQ
FNCT REQ
FRMSTK REQ
GETQSC REQ
GNCC REQ
IFSTK REQ
KWITEM REQ
LSTOPS REQ
NDXCLI REQ
NDXRTY REQ
OUTOPT REQ
PHDEF REQ
RUNTAB REQ
DIGIT REQ
FSPACK REQ
NDXXPL REQ
MAXIMA REQ
POOL REQ
RUNHAN REQ
DMDEFS REQ
FFDEFS REQ
GSLUCC REQ
INDEX REQ
NDXLIN REQ
PAGEN REQ
LETTER REQ
NMLST REQ
FOOFIL REQ
GCA REQ
MSG REQ
RNODEF REQ
DSRLIB REQ
FLGT REQ
HCT REQ
IRAC REQ
NDXPOL REQ
PASS REQ
LODEFS REQ
NUMPRM REQ
FOOREC REQ
MSGTXT REQ
NBITS REQ
KC REQ
PDT REQ
RNOMAC REQ
FLIPCHARS REQ
HLC REQ
LSTBTS REQ
OPDEV REQ