


```

NN      NN  DDDDDDDD  XX      XX  PPPPPPPP  000000  LL
NN      NN  DDDDDDDD  XX      XX  PPPPPPPP  000000  LL
NN      NN  DD        DD  XX      XX  PP        PP  00      00  LL
NN      NN  DD        DD  XX      XX  PP        PP  00      00  LL
NNNN    NN  DD        DD  XX  XX  PP        PP  00      00  LL
NNNN    NN  DD        DD  XX  XX  PP        PP  00      00  LL
NN  NN  NN  DD        DD  XX      XX  PPPPPPPP  00      00  LL
NN  NN  NN  DD        DD  XX      XX  PPPPPPPP  00      00  LL
NN      NNNN  DD        DD  XX  XX  PP        PP  00      00  LL
NN      NNNN  DD        DD  XX  XX  PP        PP  00      00  LL
NN      NN  DD        DD  XX      XX  PP        PP  00      00  LL
NN      NN  DD        DD  XX      XX  PP        PP  00      00  LL
NN      NN  DDDDDDDD  XX      XX  PP        PP  000000  LLLLLLLLLL
NN      NN  DDDDDDDD  XX      XX  PP        PP  000000  LLLLLLLLLL

```

```

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  EEEEEEEEEE  QQ      QQ
RRRRRRRR  EEEEEEEEEE  QQ      QQ
RR      RR  EE        QQ      QQ
RR      RR  EE        QQ      QQ
RR      RR  EE        QQ      QQ
RR      RR  EE        QQ      QQ
RR      RR  EEEEEEEEEE  QQQQ  QQ
RR      RR  EEEEEEEEEE  QQQQ  QQ

```

NML

! N
! LITE

MAC

!

Version: 'V04-000'

```
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```

++
FACILITY:
DSR (Digital Standard RUNOFF) /DSRPLUS DSRINDEX/INDEX Utility

ABSTRACT:
This file contains literals and macros defining the data structures
found in the internal index pool

ENVIRONMENT: Transportable

AUTHOR: JPK

CREATION DATE: January 1982

MODIFIED BY:

003 JPK00015 04-Feb-1983
Cleaned up module names, modified revision history to
conform with established standards. Updated copyright dates.

002 JPK00009 24-Jan-1983
Modified to enhance performance. The sort buckets have each
been divided into 27 sub-buckets; 1 for each letter and 1
for non-alphas. Removed reference to BUCKET from INDEX.
Definition of the structure was added to NDXPOL. References
to BUCKET were changed in modules NDXOUT, NDXINI, NDXFMT
and NDXDAT.

--

! Index entry

\$FIELD XE_FIELDS =
SET

XESA_PREV	=	[\$ADDRESS],	! Link to previous item
XESA_NEXT	=	[\$ADDRESS],	! Link to next item
XESA_SUBX	=	[\$ADDRESS],	! Sub index pointer
XESA_REF	=	[\$ADDRESS],	! Reference pointer
XESA_TEXT	=	[\$ADDRESS],	! Pointer to text of index item
XESA_SORT_AS	=	[\$ADDRESS],	! Pointer to SORT_AS string
XESH_SUBC	=	[\$SHORT_INTEGER],	! Sub index level

XESV_FLAGS	=	[\$SHORT_INTEGER],	! Entry flags
------------	---	--------------------	---------------

\$OVERLAY (XESV_FLAGS)

XESV_BARS	=	[\$BIT],	! Change bar flag
-----------	---	----------	-------------------

\$CONTINUE

XESA_BOOK_LIST	=	[\$ADDRESS]	! Master index book name list
----------------	---	-------------	-------------------------------

\$ALIGN (FULLWORD)

TES;

LITERAL

XESK_LENGTH = \$FIELD_SET_SIZE;

MACRO

\$XE_BLOCK = BLOCK [XESK_LENGTH] FIELD (XE_FIELDS) %;

! End of Index entry

! Reference entry

\$FIELD XX_FIELDS =
SET

XXSA_LINK	=	[\$ADDRESS],	! Link to additional entries
XXSA_APPEND	=	[\$ADDRESS],	! APPEND text pointer
XXSH_PAGE	=	[\$SHORT_INTEGER],	! Transaction number

XXSV_FLAGS	=	[\$SHORT_INTEGER],	! Display attributes
------------	---	--------------------	----------------------

\$OVERLAY (XXSV_FLAGS)

XXSV_BOLD	=	[\$BIT],	! Bold page reference
XXSV_UNDERLINE	=	[\$BIT],	! Underline page reference
XXSV_BEGIN	=	[\$BIT],	! Begin page range
XXSV_END	=	[\$BIT],	! End page range

\$CONTINUE

```
XXSA_BOOK          = [$ADDRESS]          ! Master index book name
```

```
$ALIGN (FULLWORD)
```

```
TES;
```

```
LITERAL  
  XX$K_LENGTH = $FIELD_SET_SIZE;
```

```
MACRO  
  $XX_BLOCK = BLOCK [XX$K_LENGTH] FIELD (XX_FIELDS) %;
```

```
! End of Reference entry
```

```
! Master index book reference entry
```

```
$FIELD XM_FIELDS =  
  SET
```

```
  XMSA_LINK          = [$ADDRESS],        ! Link to additional entries  
  XMSA_BOOK          = [$ADDRESS]        ! Pointer to book name
```

```
TES;
```

```
LITERAL  
  XMSK_LENGTH = $FIELD_SET_SIZE;
```

```
MACRO  
  $XM_BLOCK = BLOCK [XMSK_LENGTH] FIELD (XM_FIELDS) %;
```

```
! End of Master index book reference entry
```

```
! Current Entry
```

```
$FIELD C_FIELDS =  
  SET
```

```
  CSA_CURR           = [$ADDRESS],        ! Pointer to current cell  
  CSA_PREV           = [$ADDRESS],        ! Pointer to previous cell  
  CSA_HEAD           = [$ADDRESS],        ! Pointer to head of chain
```

```
$ALIGN (FULLWORD)
```

```
  CSV_FLAGS          = [$INTEGER],        ! Current cell flags
```

```
  $OVERLAY (CSV_FLAGS)
```

```
  CSV_IDNS           = [$BIT]            ! Identical string flag
```

```
  $CONTINUE
```

```
TES;
```



```
LITERAL
  CSK_LENGTH = $FIELD_SET_SIZE;
```

```
MACRO
  $C_BLOCK = BLOCK [CSK_LENGTH] FIELD (C_FIELDS) %;
```

```
! End of current entry
```

```
!
! Dummy datasets
```

```
LITERAL
  DS_X_ENTRY = XESK_LENGTH,
  DS_XX_ENTRY = XXSK_LENGTH,
  DS_XM_ENTRY = XMSK_LENGTH,
  DS_X_STRING = 0;
```

```
! Structure definition for bucket array.
```

Buckets are arranged so that each row represents the first letter of the string and each column represents the second letter of the string.

This approach is used only for master indexes as no performance improvement is realised until about 10 input files have been processed.

Indexes which are not master indexes use only the first element of each row, i.e., [0, 0] ... [26, 0].

The only exception is for nonalphabetic characters which use only element [0, 0]. Elements [0, 1] ... [0, 26] are not used since mapping all nonalphabetic characters into one row loses the sort order of the first character in the string. For nonalphabetic characters to work correctly in a two dimensional bucket scheme, the array would have to be at least 127 x 127

	0	1	...	26
0	**	not used	:	.
1	A?	AA	:	AZ
.	.	.	:	.
26	Z?	ZA	.	ZZ

```
STRUCTURE
  $BUCKET_ARRAY [ROW_IDX, COL_IDX; M, N] =
    [M * N * %UPVAL] ($BUCKET_ARRAY + (ROW_IDX * N + COL_IDX) * %UPVAL);
```

```
!-- End of NDXPOL.REQ
```


CONVRT REQ			FRMSTK REQ	GETQSC REQ					NDXCLI REQ	NDXRTY REQ				
	ECC REQ					KWITEM REQ						PHDEF REQ		RUNTAB REQ
		FLIPRECS REQ	FNCT REQ		GNCC REQ	IFSTK REQ		LSTOPS REQ				OUTOPT 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		
			FOOREC REQ				LODEFS REQ				NUMPRM REQ			
								MSGTXT REQ	NBITS REQ					
						KC REQ						PDT REQ	RNOMAC REQ	
	FLIRCHARS REQ				HLC REQ		LSTBTS REQ				OPDEV REQ			