


```

NN      NN  DDDDDDD  XX      XX      IIIIII  NN      NN  IIIIII
NN      NN  DDDDDDD  XX      XX      IIIIII  NN      NN  IIIIII
NN      NN  DD      DD  XX      XX      II      NN      NN  II
NN      NN  DD      DD  XX      XX      II      NN      NN  II
NNNN    NN  DD      DD  XX  XX      II      NNNN    NN  II
NNNN    NN  DD      DD  XX  XX      II      NNNN    NN  II
NN  NN  NN  DD      DD      XX      II      NN  NN  NN  II
NN  NN  NN  DD      DD      XX      II      NN  NN  NN  II
NN      NNNN DD      DD  XX  XX      II      NN  NNNN  II
NN      NNNN DD      DD  XX  XX      II      NN  NNNN  II
NN      NN  DD      DD  XX      XX      II      NN      NN  II
NN      NN  DD      DD  XX      XX      II      NN      NN  II
NN      NN  DDDDDDD  XX      XX      IIIIII  NN      NN  IIIIII
NN      NN  DDDDDDD  XX      XX      IIIIII  NN      NN  IIIIII

```

```

LL      IIIIII  SSSSSSS
LL      IIIIII  SSSSSSS
LL      II      SS
LL      II      SS
LL      II      SS
LL      II      SS
LL      II      SSSSSS
LL      II      SSSSSS
LL      II      SS
LL      II      SS
LL      II      SS
LL      IIIIII  SSSSSSS
LLLLLLLLLL  IIIIII  SSSSSSS
LLLLLLLLLL  IIIIII  SSSSSSS

```



```
1 0001 0 %TITLE 'NDXINI -- Once only initialization and global data'  
2 0002 0 MODULE NDXINI (IDENT = 'V04-000'  
3 0003 0 ) = %BLISS32 [, ADDRESSING_MODE (EXTERNAL = LONG_RELATIVE, NONEXTERNAL = LONG_RELATIVE)]  
4 0004 0  
5 0005 1 BEGIN  
6 0006 1  
7 0007 1  
8 0008 1  
9 0009 1  
10 0010 1 *  
11 0011 1 * COPYRIGHT (c) 1978, 1980, 1982, 1984 BY *  
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26 0026 1 * SOFTWARE ON EQUIPMENT WHICH IS NOT SUPPLIED BY DIGITAL. *  
27 0027 1 *  
28 0028 1 *  
29 0029 1 *****  
30 0030 1  
31 0031 1  
32 0032 1 ++  
33 0033 1 FACILITY:  
34 0034 1 DSR (Digital Standard RUNOFF) /DSPPLUS DSRINDEX/INDEX Utility  
35 0035 1  
36 0036 1 ABSTRACT:  
37 0037 1 This module contains once only initialization code and global data.  
38 0038 1  
39 0039 1 ENVIRONMENT: transportable  
40 0040 1  
41 0041 1 AUTHOR: JPK  
42 0042 1  
43 0043 1 CREATION DATE: December 1981  
44 0044 1  
45 0045 1 MODIFIED BY:  
46 0046 1  
47 0047 1 005 JPK00017 23-Feb-1983  
48 0048 1 Modified NDXINI to initialize the zero'th entries of LINES,  
49 0049 1 RLINES and TLINES which is where the telltale strings are  
50 0050 1 stored by NDXFMT.  
51 0051 1 Modified NDXFMT to write appropriate prologue for /TELLTALE,  
52 0052 1 save the appropriate lines for left and right telltales, and  
53 0053 1 to mark the end of every entry with a NULL.  
54 0054 1 Modified NDXPAG to change the NULL following each entry to a  
55 0055 1 space if LAYOUT is SEPARATE or to a comma otherwise and to  
56 0056 1 generate and output telltales.  
57 0057 1
```

58	0058	1	004	JPK00015	04-Feb-1983	
59	0059	1		Cleaned up module names, modified revision history to		
60	0060	1		conform with established standards. Updated copyright dates.		
61	0061	1				
62	0062	1	003	JPK00009	24-Jan-1983	
63	0063	1		Modified to enhance performance. The sort buckets have each		
64	0064	1		been divided into 27 sub-buckets; 1 for each letter and 1		
65	0065	1		for non-alphas. Removed reference to BUCKET from INDEX.		
66	0066	1		Definition of the structure was added to NDXPOL. References		
67	0067	1		to BUCKET were changed in modules NDXOUT, NDXINI, NDXFMT		
68	0068	1		and NDXDAT.		
69	0069	1				
70	0070	1	002	JPK00005	24-Sep-1982	
71	0071	1		Removed definition of CHRFDW in NDXINI. No longer needed.		
72	0072	1				
73	0073	1	--			

NDXINI
V04-000

NDXINI -- Once only initialization and global d M 8
16-Sep-1984 01:02:31
14-Sep-1984 13:07:13

VAX-11 Bliss-32 V4.0-742
[RUNOFF.SRC]NDXINI.BLI;1

NDX
V04

```
: 75      0074 1 |  
: 76      0075 1 | TABLE OF CONTENTS:  
: 77      0076 1 |  
: 78      0077 1 | FORWARD ROUTINE  
: 79      0078 1 |   NDXINI : NOVALUE;  
: 80      0079 1 |  
: 81      0080 1 | INCLUDE FILES:  
: 82      C081 1 |  
: 83      0082 1 |  
: 84      0083 1 | LIBRARY 'NXPORT:XPORT';  
: 85      0084 1 |  
: 86      0085 1 | SWITCHES LIST (REQUIRE);  
: 87      0086 1 |  
: 88      0087 1 | REQUIRE 'REQ:NDXCLI';
```

! Once only initialization routine

:

IDENT = 0V04-00004

```

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*
*****

```

```

**
** FACILITY:
** DSR (Digital Standard RUNOFF) /DSRPLUS DSRINDEX/INDEX Utility
**
** ABSTRACT: INDEX command line definitions
**
** ENVIRONMENT: Transportable
**
** AUTHOR: JPK
**
** CREATION DATE: January 1982
**
** MODIFIED BY:
**
** 004 JPK00015 04-Feb-1983
** Cleaned up module names, modified revision history to
** conform with established standards. Updated copyright dates.
**
** 003 JPK00011 24-Jan-1983
** Changed CMDBLK [NDX$G_LEVEL] to CMDBLK [NDX$H_LEVEL]
** Changed CMDBLK [NDX$H_FORMAT] to CMDBLK [NDX$H_LAYOUT]
** Changed CMDBLK [NDX$V_TMS11] and CMDBLK [NDX$V_TEX] to CMDBLK [NDX$H_FORMAT]
** Changed comparisons of (.CHRSIZ EQLA CHRSZA) to
** (.CMDBLK [NDX$H_FORMAT] EQL TMS11 A).
** Definitions were changed in NDXCLI and references to the
** effected fields were changed in NDXPAG, NDXFMT, INDEX, NDXVMS
** and NDXCLIDMP.
**
** 002 RER00002 20-Jan-1983
** Modified VMS command line interface module NDXVMS:
** - changed /FORMAT qualifier to /LAYOUT.

```

```

R0088 1
R0089 1
R0090 1
R0091 1
R0092 1
R0093 1
R0094 1
R0095 1
R0096 1
R0097 1
R0098 1
R0099 1
R0100 1
R0101 1
R0102 1
R0103 1
R0104 1
R0105 1
R0106 1
R0107 1
R0108 1
R0109 1
R0110 1
R0111 1
R0112 1
R0113 1
R0114 1
R0115 1
R0116 1
R0117 1
R0118 1
R0119 1
R0120 1
R0121 1
R0122 1
R0123 1
R0124 1
R0125 1
R0126 1
R0127 1
R0128 1
R0129 1
R0130 1
R0131 1
R0132 1
R0133 1
R0134 1
R0135 1
R0136 1
R0137 1
R0138 1
R0139 1
R0140 1
R0141 1
R0142 1
R0143 1
R0144 1

```

NDXINI
V04-000

NDXINI -- Once only initialization and global d ^{B 9}
16-Sep-1984 01:02:31
15-Sep-1984 22:53:19

VAX-11 Bliss-32 V4.0-742
_S255\$DUA28:[RUNOFF.SRC]NDXCLI.REQ;1 Page 5
(1)

.: R0145 1
.: R0146 1
.: R0147 1
.: R0148 1
.: R0149 1
.: R0150 1
.: R0151 1
.: R0152 1
.: R0153 1
.: R0154 1

```
      | - changed use of /RESERVE and /REQUIRE for DSRPLUS.  
      | - added code for new DSRPLUS qualifiers /FORMAT and  
      | /TELLTALE HEADINGS.  
      | Added fields to NDXCLI for new qualifiers: NDXSV_TELLTALE  
      | and NDXSV_TEX.  
      | Conditionalized output of NDXSV_PAGE_MERGE in NDXCLIDMP to  
      | account for different DSR and DSRPLUS default values.
```

NDI
V04

.:
.:
.:
.:
.:
.:
.:
.:
.:
.:
.:

R0155 1
R0156 1
R0157 1
R0158 1
R0159 1
R0160 1
R0161 1
R0162 1
R0163 1
R0164 1
R0165 1
R0166 1
R0167 1
R0168 1
R0169 1
R0170 1
R0171 1
R0172 1
R0173 1
R0174 1
R0175 1
R0176 1
R0177 1
R0178 1
R0179 1
R0180 1
R0181 1
R0182 1
R0183 1
R0184 1
R0185 1
R0186 1
R0187 1
R0188 1
R0189 1
R0190 1
R0191 1
R0192 1
R0193 1
R0194 1
R0195 1
R0196 1
R0197 1
R0198 1
R0199 1
R0200 1
R0201 1
R0202 1
R0203 1
R0204 1
R0205 1
R0206 1
R0207 1
R0208 1
R0209 1
R0210 1
R0211 1

```

:
: NDXCMD_FIELDS
:
$FIELD ndxcmd_fields =
  SET
  NDXSV_OPTIONS      = [$INTEGER],      ! Command option indicators:
  $OVERLAY (NDXSV_OPTIONS)
  NDXSV_INPUT_CONCAT = [$BIT],          ! Input file concatenated to previous
  NDXSV_OUTPUT       = [$BIT],          ! Generate output file
  NDXSV_REQUIRE      = [$BIT],          ! Require file specified
  NDXSV_PAGES        = [$BIT],          ! Include page references in index
  NDXSV_OVERRIDE     = [$BIT],          ! Override master index information
  NDXSV_STANDARD_PAGE = [$BIT],         ! Generate standard page numbers
  NDXSV_CONTINUATION = [$BIT],         ! Generate continuation headings
  NDXSV_GUIDE        = [$BIT],          ! Generate guide headings
  NDXSV_WORD_SORT    = [$BIT],          ! Sort entries word by word
  NDXSV_LOG          = [$BIT],          ! Generate /LOG message
  NDXSV_MASTER       = [$BIT],          ! Generate a master index
  NDXSV_PAGE_MERGE   = [$BIT],          ! Merge adjacent page references
  NDXSV_TELLTALE     = [$BIT],          ! Generate telltale headings
  $CONTINUE
  NDXSH_FORMAT       = [$SHORT_INTEGER], ! Output format: DSR, TMS, TEX
  NDXSH_LAYOUT       = [$SHORT_INTEGER], ! Output layout type
  NDXSH_NONALPHA     = [$SHORT_INTEGER], ! Treatment of leading nonalphas during sort
  NDXSH_LEVEL        = [$SHORT_INTEGER], ! Deepest level to include in index
  NDXSG_COLUMN_WID   = [$INTEGER],       ! Column width
  NDXSG_GUTTER_WID   = [$INTEGER],       ! Gutter width
  NDXSG_LINES_PAGE   = [$INTEGER],       ! Lines per page
  NDXSG_RESERVE_LINES = [$INTEGER],      ! Number of lines to reserve when requiring a file
  NDXSG_SEPARATE_WIDTH = [$INTEGER],     ! Width of reference portion of entry
  NDXST_MASTER_BOOK  = [$DESCRIPTOR(DYNAMIC)], ! Book name descriptor for Master indexing
  NDXST_INPUT_FILE   = [$DESCRIPTOR(DYNAMIC)], ! Input file name descriptor
  NDXST_OUTPUT_FILE  = [$DESCRIPTOR(DYNAMIC)], ! Output file name descriptor
  NDXST_REQUIRE_FILE = [$DESCRIPTOR(DYNAMIC)], ! Require file name descriptor
  NDXST_RELATED_FILE = [$DESCRIPTOR(DYNAMIC)], ! Related file name descriptor is saved here
  ! by NDXINP for later use by MAKNDX
  NDXST_COMMAND_LINE = [$DESCRIPTOR(DYNAMIC)] ! Copy of entire command line
  TES;
:
: End of NDXCMD_FIELDS
:
LITERAL
  NDXCMD$K_LENGTH = $FIELD_SET_SIZE;
MACRO
  $NDXCMD = BLOCK [NDXCMD$K_LENGTH] FIELD (NDXCMD_FIELDS) %;
$LITERAL
  DSR          = $DISTINCT,      ! Output formats (NDXSH_FORMAT)
  TMS11_A     = $DISTINCT,      ! Runoff
  ! TMS=A

```



```
: R0212 1      TMS11_E      = $DISTINCT,  ! TMS=E
: R0213 1      TEX          = $DISTINCT;    ! TEX
: R0214 1
: R0215 1      $LITERAL
: R0216 1      TWO_COLUMN  = $DISTINCT,  ! Output layouts (NDX$H_LAYOUT)
: R0217 1      ONE_COLUMN  = $DISTINCT,  ! Normal two column format
: R0218 1      SEPARATE    = $DISTINCT,  ! Normal one column format
: R0219 1      GALLEY      = $DISTINCT;    ! Separate reference format
: R0220 1
: R0221 1      $LITERAL
: R0222 1      BEFORE      = $DISTINCT,  ! Treatment of leading nonalphas during sort (NDX$H_NONALPHA)
: R0223 1      AFTER       = $DISTINCT,  ! Leading nonalphas sort before alphas
: R0224 1      IGNORE      = $DISTINCT;    ! Leading nonalphas sort after alphas
: R0225 1
: R0226 1      !
: R0227 1      !--      End of NDXCLI.REQ
```

NDXINI
V04-000

NDXINI -- Once only initialization and global d ^{E 9}
16-Sep-1984 01:02:31
14-Sep-1984 13:07:13

VAX-11 Bliss-32 V4.0-742
[RUNOFF.SRC]NDXINI.BLI;1

Page 8
(2)

: 89
: 90

0228 1
0229 1 REQUIRE 'REQ:NDXXPL';

NDI
VOI

.....

R0230 1
R0231 1
R0232 1
R0233 1
R0234 1
R0235 1
R0236 1
R0237 1
R0238 1
R0239 1
R0240 1
R0241 1
R0242 1
R0243 1
R0244 1
R0245 1
R0246 1
R0247 1
R0248 1
R0249 1
R0250 1
R0251 1
R0252 1
R0253 1
R0254 1
R0255 1
R0256 1
R0257 1
R0258 1
R0259 1
R0260 1
R0261 1
R0262 1
R0263 1
R0264 1
R0265 1
R0266 1
R0267 1
R0268 1
R0269 1
R0270 1
R0271 1
R0272 1
R0273 1
R0274 1
R0275 1
R0276 1
R0277 1
R0278 1
R0279 1
R0280 1
R0281 1
R0282 1
R0283 1
R0284 1
R0285 1
R0286 1

```

Version:      'V04-000'

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**
FACILITY:      DSR (Digital Standard RUNOFF) / DSRPLUS

ABSTRACT:
  This file contains definitions of data structures used to support
  the extended indexing features of the DSRPLUS INDEX program.

ENVIRONMENT:   Transportable BLISS

AUTHOR:        J.P. Kellerman

CREATION DATE: January 1982

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.

--

! Extended INDEX attributes block.

$FIELD XPL_FIELDS =
  SET

  XPL$V_OPTIONS      = [$INTEGER],      ! Attributes options

  $OVERLAY (XPL$V_OPTIONS)

```

```

: R0287 1 XPLSV_VALID = [$BIT], Attributes block contains valid information.
: R0288 1 XPLSV_BOLD = [$BIT], Bold page reference.
: R0289 1 XPLSV_UNDERLINE = [$BIT], Underlined page reference.
: R0290 1 XPLSV_BEGIN = [$BIT], Begin page range.
: R0291 1 XPLSV_END = [$BIT], End page range.
: R0292 1 XPLSV_MASTER = [$BIT], Master index entry.
: R0293 1 XPLSV_PERMUTE = [$BIT], Permute index entry.
: R0294 1 XPLSV_NOPERMUTE = [$BIT], Set if permute explicitly forbidden.
: R0295 1 XPLSV_SORT = [$BIT], Set if SORT string present.
: R0296 1 XPLSV_APPEND = [$BIT], Set if append string present.
: R0297 1
: R0298 1 $CONTINUE
: R0299 1
: R0300 1 XPL$T_SORT = [$DESCRIPTOR(DYNAMIC)], ! SORT string.
: R0301 1 XPL$T_APPEND = [$DESCRIPTOR(DYNAMIC)] ! APPEND string.
: R0302 1
: R0303 1 TES;
: R0304 1
: R0305 1 LITERAL
: R0306 1 XPL$K_LENGTH = $FIELD_SET_SIZE;
: R0307 1
: R0308 1 MACRO
: R0309 1 $XPL_BLOCK = BLOCK [XPL$K_LENGTH] FIELD (XPL_FIELDS) %;
: R0310 1
: R0311 1
: R0312 1 ! Macros for INDEX_ATTRIBUTES flags
: R0313 1
: R0314 1 MACRO
: R0315 1 XPLUSV_VALID = 0, 0, 1, 0 %, ! Set if attributes data is valid.
: R0316 1 XPLUSV_BOLD = 0, 1, 1, 0 %, ! Set if page reference is bolded.
: R0317 1 XPLUSV_UNDERLINE = 0, 2, 1, 0 %, ! Set if page reference is underlined.
: R0318 1 XPLUSV_BEGIN = 0, 3, 1, 0 %, ! Set if entry begins a page range.
: R0319 1 XPLUSV_END = 0, 4, 1, 0 %, ! Set if entry ends a page range.
: R0320 1 XPLUSV_MASTER = 0, 5, 1, 0 %, ! Set if master index entry only.
: R0321 1 XPLUSV_PERMUTE = 0, 6, 1, 0 %, ! Set if entry is to be permuted.
: R0322 1 XPLUSV_NOPERMUTE = 0, 7, 1, 0 %, ! Set if permute is explicitly forbidden.
: R0323 1 XPLUSV_SORT = 0, 8, 1, 0 %, ! Set if entry contains a SORT string.
: R0324 1 XPLUSV_APPEND = 0, 9, 1, 0 %, ! Set if entry contains an APPEND string.
: R0325 1
: R0326 1 ! End of NDXXPL.REQ

```

NDXINI
V04-000

NDXINI -- Once only initialization and global d ^{H 9}
16-Sep-1984 01:02:31
14-Sep-1984 13:07:13

VAX-11 Bliss-32 V4.0-742
[RUNOFF.SRC]NDXINI.BLI;1

Page 11
(2)

: 91
: 92

0327 1
0328 1 REQUIRE 'REQ:NDXPO';

NDI
VOI

.....

.....

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.....

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.....

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.....

R0329 1
R0330 1
R0331 1
R0332 1
R0333 1
R0334 1
R0335 1
R0336 1
R0337 1
R0338 1
R0339 1
R0340 1
R0341 1
R0342 1
R0343 1
R0344 1
R0345 1
R0346 1
R0347 1
R0348 1
R0349 1
R0350 1
R0351 1
R0352 1
R0353 1
R0354 1
R0355 1
R0356 1
R0357 1
R0358 1
R0359 1
R0360 1
R0361 1
R0362 1
R0363 1
R0364 1
R0365 1
R0366 1
R0367 1
R0368 1
R0369 1
R0370 1
R0371 1
R0372 1
R0373 1
R0374 1
R0375 1
R0376 1
R0377 1
R0378 1
R0379 1
R0380 1
R0381 1
R0382 1
R0383 1
R0384 1
R0385 1

```

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.

--

```

```

: R0386 1 ! Index entry
: R0387 1
: R0388 1 $FIELD XE_FIELDS =
: R0389 1 SET
: R0390 1
: R0391 1 XESA_PREV = [$ADDRESS], ! Link to previous item
: R0392 1 XESA_NEXT = [$ADDRESS], ! Link to next item
: R0393 1 XESA_SUBX = [$ADDRESS], ! Sub index pointer
: R0394 1 XESA_REF = [$ADDRESS], ! Reference pointer
: R0395 1 XESA_TEXT = [$ADDRESS], ! Pointer to text of index item
: R0396 1 XESA_SORT_AS = [$ADDRESS], ! Pointer to SORT_AS string
: R0397 1 XESH_SUBC = [$SHORT_INTEGER], ! Sub index level
: R0398 1
: R0399 1 XESV_FLAGS = [$SHORT_INTEGER], ! Entry flags
: R0400 1
: R0401 1 $OVERLAY (XESV_FLAGS)
: R0402 1
: R0403 1 XESV_BARS = [$BIT], ! Change bar flag
: R0404 1
: R0405 1 $CONTINUE
: R0406 1
: R0407 1 XESA_BOOK_LIST = [$ADDRESS] ! Master index book name list
: R0408 1
: R0409 1 $ALIGN (FULLWORD)
: R0410 1
: R0411 1 TES;
: R0412 1
: R0413 1 LITERAL
: R0414 1 XESK_LENGTH = $FIELD_SET_SIZE;
: R0415 1
: R0416 1 MACRO
: R0417 1 $XE_BLOCK = BLOCK [XESK_LENGTH] FIELD (XE_FIELDS) %;
: R0418 1
: R0419 1 ! End of Index entry
: R0420 1
: R0421 1
: R0422 1 ! Reference entry
: R0423 1
: R0424 1 $FIELD XX_FIELDS =
: R0425 1 SET
: R0426 1
: R0427 1 XXSA_LINK = [$ADDRESS], ! Link to additional entries
: R0428 1 XXSA_APPEND = [$ADDRESS], ! APPEND text pointer
: R0429 1 XXSH_PAGE = [$SHORT_INTEGER], ! Transaction number
: R0430 1
: R0431 1 XXSV_FLAGS = [$SHORT_INTEGER], ! Display attributes
: R0432 1
: R0433 1 $OVERLAY (XXSV_FLAGS)
: R0434 1
: R0435 1 XXSV_BOLD = [$BIT], ! Bold page reference
: R0436 1 XXSV_UNDERLINE = [$BIT], ! Underline page reference
: R0437 1 XXSV_BEGIN = [$BIT], ! Begin page range
: R0438 1 XXSV_END = [$BIT], ! End page range
: R0439 1
: R0440 1 $CONTINUE
: R0441 1
: R0442 1 XXSA_BOOK = [$ADDRESS] ! Master index book name

```

```

R0443 1
R0444 1      $ALIGN (FULLWORD)
R0445 1
R0446 1      TES;
R0447 1
R0448 1      LITERAL
R0449 1      XXSK_LENGTH = $FIELD_SET_SIZE;
R0450 1
R0451 1      MACRO
R0452 1      $XX_BLOCK = BLOCK [XXSK_LENGTH] FIELD (XX_FIELDS) %;
R0453 1
R0454 1      ! End of Reference entry
R0455 1
R0456 1
R0457 1      ! Master index book reference entry
R0458 1
R0459 1      $FIELD XM_FIELDS =
R0460 1      SET
R0461 1
R0462 1      XMSA_LINK      = [$ADDRESS],      ! Link to additional entries
R0463 1      XMSA_BOOK      = [$ADDRESS],      ! Pointer to book name
R0464 1
R0465 1      TES;
R0466 1
R0467 1      LITERAL
R0468 1      XMSK_LENGTH = $FIELD_SET_SIZE;
R0469 1
R0470 1      MACRO
R0471 1      $XM_BLOCK = BLOCK [XMSK_LENGTH] FIELD (XM_FIELDS) %;
R0472 1
R0473 1      ! End of Master index book reference entry
R0474 1
R0475 1
R0476 1      ! Current Entry
R0477 1
R0478 1      $FIELD C_FIELDS =
R0479 1      SET
R0480 1
R0481 1      CSA_CURR      = [$ADDRESS],      ! Pointer to current cell
R0482 1      CSA_PREV      = [$ADDRESS],      ! Pointer to previous cell
R0483 1      CSA_HEAD      = [$ADDRESS],      ! Pointer to head of chain
R0484 1
R0485 1      $ALIGN (FULLWORD)
R0486 1
R0487 1      CSV_FLAGS      = [$INTEGER],      ! Current cell flags
R0488 1
R0489 1      $OVERLAY (CSV_FLAGS)
R0490 1
R0491 1      CSV_IDNS      = [$BIT]          ! Identical string flag
R0492 1
R0493 1      $CONTINUE
R0494 1
R0495 1      TES;
R0496 1
R0497 1      LITERAL
R0498 1      CSK_LENGTH = $FIELD_SET_SIZE;
R0499 1

```


: R0500 1
 : R0501 1
 : R0502 1
 : R0503 1
 : R0504 1
 : R0505 1
 : R0506 1
 : R0507 1
 : R0508 1
 : R0509 1
 : R0510 1
 : R0511 1
 : R0512 1
 : R0513 1
 : R0514 1
 : R0515 1
 : R0516 1
 : R0517 1
 : R0518 1
 : R0519 1
 : R0520 1
 : R0521 1
 : R0522 1
 : R0523 1
 : R0524 1
 : R0525 1
 : R0526 1
 : R0527 1
 : R0528 1
 : R0529 1
 : R0530 1
 : R0531 1
 : R0532 1
 : R0533 1
 : R0534 1
 : R0535 1
 : R0536 1
 : R0537 1
 : R0538 1
 : R0539 1
 : R0540 1
 : R0541 1
 : R0542 1
 : R0543 1
 : R0544 1
 : R0545 1

```

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 into one row loses the sort order of the first
: character in the string. For nonalphabetic 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
  
```

NDXINI
V04-000

NDXINI -- Once only initialization and global d ^{M 9} 16-Sep-1984 01:02:31
14-Sep-1984 13:07:13

VAX-11 Bliss-32 V4.0-742
[RUNOFF.SRC]NDXINI.BLI;1

Page 16
(2)

: 93
: 94

0546 1
0547 1 REQUIRE 'REQ:PAGEN';

ND)
V04

.....

R0548 1
R0549 1
R0550 1
R0551 1
R0552 1
R0553 1
R0554 1
R0555 1
R0556 1
R0557 1
R0558 1
R0559 1
R0560 1
R0561 1
R0562 1
R0563 1
R0564 1
R0565 1
R0566 1
R0567 1
R0568 1
R0569 1
R0570 1
R0571 1
R0572 1
R0573 1
R0574 1
R0575 1
R0576 1
R0577 1
R0578 1
R0579 1
R0580 1
R0581 1
R0582 1
R0583 1
R0584 1
R0585 1
R0586 1
R0587 1
R0588 1
R0589 1
R0590 1
R0591 1
R0592 1
R0593 1
R0594 1
R0595 1
R0596 1
R0597 1
R0598 1
R0599 1
R0600 1
R0601 1
R0602 1
R0603 1
R0604 1

```

Version:      'V04-000'

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**
FACILITY:      DSR (Digital Standard RUNOFF) / DSRPLUS

ABSTRACT:
  A page number carries with it not only its current value, but also
  codes as to how those values are to be displayed when they are finally
  output. It was decided to do it this way rather than have a separate
  table so that the program TCX would have less trouble.

ENVIRONMENT:   Transportable BLISS

AUTHOR:        Rich Friday

CREATION DATE: 1978

MODIFIED BY:

  004      KAD00004      Keith Dawson      07-Mar-1983
           Global edit of all modules. Updated module names, idents,
           copyright dates. Changed require files to BLISS library.

--

LITERAL
  page_sct_size = 4;

LITERAL
  sct_chapt      = 1,
  sct_index      = 2,
  sct_append     = 3;

!Type of section:
! Chapter section.
! Index section.
! Appendix section.

```

```
: R0605 1
: R0606 1
: R0607 1
: R0608 1
: R0609 1
: R0610 1
: R0611 1
: R0612 1
: R0613 1
: R0614 1
: R0615 1
: R0616 1
: R0617 1
: R0618 1
: R0619 1
: R0620 1
: R0621 1
: R0622 1
: R0623 1
: R0624 1
: R0625 1
: R0626 1
: R0627 1

LITERAL
  sct_low      = 1;
  sct_high     = 3;

MACRO
  sct_typ      = 0, 0, 4, 0 %;
  sct_page_d   = 0, 4, 4, 0 %;
  sct_sub_page = 0, %BPVAL/2, %BPVAL/2, 0 %;
  sct_number   = 1, 0, %BPVAL, 0 %;
  sct_page     = 2, 0, %BPVAL, 0 %;
  sct_subpg_d  = 3, 0, 4, 0 %;
  sct_chapt_d  = 3, 4, 4, 0 %;
  sct_appen_d  = 3, 8, 4, 0 %;
  sct_index_d  = 3, 12, 4, 0 %;

MACRO
  sct_run_page = 3, %BPVAL/2, %BPVAL/2, 0 %;

MACRO
  page_definition = BLOCK [page_sct_size] %;

!
! End of PAGEN.REQ
```

```

95 0628 1
96 0629 1 SWITCHES LIST (NOREQUIRE);
97 0630 1
98 0631 1
99 0632 1 MACROS:
100 0633 1
101 0634 1
102 0635 1 EQUATED SYMBOLS:
103 0636 1
104 0637 1
105 0638 1 GLOBAL LITERAL
106 0639 1     TAB = %0'11' : UNSIGNED (8),      ! TAB character
107 0640 1     TMSCOL = 39,                  ! Default TMS column width
108 0641 1     RINTES = %0'34' : UNSIGNED (8), ! RUNOFF escape sequence character
109 0642 1     MAXLST = 10,                  ! Maximum subindex depth
110 0643 1     MAXLIN = 80;                  ! Maximum number of lines per page
111 0644 1
112 0645 1 LITERAL
113 0646 1     TRUE = 1;
114 0647 1     FALSE = 0;
115 0648 1
116 0649 1
117 0650 1 OWN STORAGE:
118 0651 1
119 0652 1
120 0653 1 GLOBAL
121 0654 1     OUTIOB : $XPO_IOB (),              ! Output file IOB
122 0655 1     CMDBLK : $NDXCMD,                ! Command line information block
123 0656 1     XPLBLK : $XPL_BLOCK,            ! Extended indexing information block
124 0657 1     PAGEN : PAGE_DEFINITION;       ! Page reference block
125 0658 1
126 0659 1 GLOBAL
127 0660 1     BUCKET : $BUCKET_ARRAY [27, 27]; ! Hashing buckets
128 0661 1                                     ! There are 26 buckets for letters, and
129 0662 1                                     ! one for all other characters.
130 0663 1 GLOBAL
131 0664 1     LSTPTR : REF $XE_BLOCK,
132 0665 1     INDLVL,
133 0666 1     LSTSTK : VECTOR [MAXLST + 1];    ! Index level
134 0667 1                                     ! Temporary entry stack
135 0668 1 GLOBAL
136 0669 1     NDXPOL : INITIAL (0),              ! Index pool variables
137 0670 1     NDXSGE : INITIAL (0),          ! Address of indexing pool
138 0671 1     NDXSGF : INITIAL (0);          ! End of current segment.
139 0672 1
140 0673 1 GLOBAL
141 0674 1     XTNPOL : INITIAL (0),              ! Transaction pool variables
142 0675 1     XTNCNT : INITIAL (0),            ! Address of transaction pool
143 0676 1     XTNLSP : INITIAL (0),            ! Number of XTNTAB entries
144 0677 1     XTNLSP : INITIAL (0),
145 0678 1     XTNSGP : INITIAL (0),
146 0679 1     XTNTAB : INITIAL (0),
147 0680 1     XPAGEN : INITIAL (0);          !List of transaction numbers assigned
148 0681 1
149 0682 1 GLOBAL
150 0683 1     BOOKID : INITIAL (0);              ! Address of master index book id
151 0684 1

```

```

: 152 0685 1 GLOBAL : Line and page counting variables
: 153 0686 1 PAGENO : INITIAL (0), : Page number
: 154 0687 1 ALLOWD, : Usuable lines per page
: 155 0688 1 LCOUNT, : Number of lines in left column
: 156 0689 1 RCOUNT, : Number of lines in right column
: 157 0690 1 TCOUNT; : Number of lines in temp column
: 158 0691 1
: 159 0692 1
: 160 0693 1 : NOTE: The vectors and blockvectors below have two extra entries allocated.
: 161 0694 1 : The zeroth entry is used to save the telltale strings for the column.
: 162 0695 1 : The last entry is so that there will always be an available line at
: 163 0696 1 : the end of the column.
: 164 0697 1
: 165 0698 1 : The temp column is used during the generation of the index as a
: 166 0699 1 : temporary save area for lines that are moved from one column to
: 167 0700 1 : another. It is also used during generation of the last page of
: 168 0701 1 : two column output.
: 169 0702 1
: 170 0703 1 GLOBAL
: 171 0704 1 LTYPE : VECTOR [MAXLIN + 2], : Left column line types
: 172 0705 1 LINES : BLOCKVECTOR [MAXLIN + 2, STR$K_D_BLN], : Left column string descriptors
: 173 0706 1 RTYPE : VECTOR [MAXLIN + 2], : Right column line types
: 174 0707 1 RLINES : BLOCKVECTOR [MAXLIN + 2, STR$K_D_BLN], : Right column string descriptors
: 175 0708 1 TTYPE : VECTOR [MAXLIN + 2], : Temp column line types
: 176 0709 1 TLINES : BLOCKVECTOR [MAXLIN + 2, STR$K_D_BLN]; : Temp column string descriptors
: 177 0710 1
: 178 0711 1
: 179 0712 1 : EXTERNAL REFERENCES:
: 180 0713 1

```

```
182 0714 1 %SBTTL 'GLOBAL ROUTINE NDXINI -- Once only initialization'
183 0715 1 GLOBAL ROUTINE NDXINI : NOVALUE =
184 0716 1 ++
185 0717 1
186 0718 1 FUNCTIONAL DESCRIPTION:
187 0719 1
188 0720 1 This routine is called by the command line interface routine
189 0721 1 to do once only initialization of global data structures.
190 0722 1
191 0723 1 FORMAL PARAMETERS:
192 0724 1
193 0725 1 None.
194 0726 1
195 0727 1 IMPLICIT INPUTS:
196 0728 1
197 0729 1 None.
198 0730 1
199 0731 1 IMPLICIT OUTPUTS:
200 0732 1
201 0733 1 CMDBLK - Command line information block is initialized
202 0734 1 XPLBLK - Extended indexing attributes block is initialized
203 0735 1 LLINES - Left column string descriptors are initialized
204 0736 1 RLINES - Right column string descriptors are initialized
205 0737 1 TLLINES - String descriptors for right column on last page
206 0738 1
207 0739 1 ROUTINE VALUE:
208 0740 1 COMPLETION CODES:
209 0741 1
210 0742 1 None.
211 0743 1
212 0744 1 SIDE EFFECTS:
213 0745 1
214 0746 1 None.
215 0747 1 --
216 0748 2 BEGIN
217 0749 2
218 0750 2 Initialize the command line information block
219 0751 2
220 0752 2 CMDBLK [NDX$V OPTIONS] = 0;
221 0753 2 $STR_DESC_INIT (DESCRIPTOR = CMDBLK [NDX$T_MASTER_BOOK], CLASS = DYNAMIC);
222 0754 2 $STR_DESC_INIT (DESCRIPTOR = CMDBLK [NDX$T_INPUT_FILE], CLASS = DYNAMIC);
223 0755 2 $STR_DESC_INIT (DESCRIPTOR = CMDBLK [NDX$T_OUTPUT_FILE], CLASS = DYNAMIC);
224 0756 2 $STR_DESC_INIT (DESCRIPTOR = CMDBLK [NDX$T_REQUIRE_FILE], CLASS = DYNAMIC);
225 0757 2 $STR_DESC_INIT (DESCRIPTOR = CMDBLK [NDX$T_COMMAND_LINE], CLASS = DYNAMIC);
226 0758 2
227 0759 2
228 0760 2 Initialize related file specification descriptor. This string is
229 0761 2 set to the resultant input file specification by NDXINP for every
230 0762 2 input file which is not concatenated to the previous one. Thus the
231 0763 2 related file name for a series of concatenated input files is the
232 0764 2 resultant file name of the first file in the series.
233 0765 2
234 0766 2 $STR_DESC_INIT (DESCRIPTOR = CMDBLK [NDX$T_RELATED_FILE], CLASS = DYNAMIC);
235 0767 2
236 0768 2
237 0769 2 Initialize extended indexing attributes block
238 0770 2
```

```

: 239      0771 2  XPLBLK [XPLSV_VALID] = FALSE; ! No extended indexing attributes seen yet
: 240      0772 2  $STR_DESC_INIT (DESCRIPTOR = XPLBLK [XPLST_SORT], CLASS = DYNAMIC);
: 241      0773 2  $STR_DESC_INIT (DESCRIPTOR = XPLBLK [XPLST_APPEND], CLASS = DYNAMIC);
: 242      0774 2
: 243      0775 2
: 244      0776 2  Initialize string descriptors used to build a page of output
: 245      0777 2
: 246      0778 2  INCR I FROM 0 TO MAXLIN + 1 DO
: 247      0779 2  BEGIN
: 248      0780 2  $STR_DESC_INIT (DESCRIPTOR = LINES [.I, 0,0,0,0], CLASS = DYNAMIC);
: 249      0781 2  $STR_DESC_INIT (DESCRIPTOR = RLINES [.I, 0,0,0,0], CLASS = DYNAMIC);
: 250      0782 2  $STR_DESC_INIT (DESCRIPTOR = TLINE [.I, 0,0,0,0], CLASS = DYNAMIC);
: 251      0783 2  END;
: 252      0784 2
: 253      0785 1  END;

```

```

.TITLE NDXINI NDXINI -- Once only initialization and g
       global d
.IDENT \V04-000\
.PSECT $GLOBAL$,NOEXE,2

```

00000	OUTIOB::	.BLKB	244
000F4	CMDBLK::	.BLKB	80
00144	XPLBLK::	.BLKB	20
00158	PAGEN::	.BLKB	16
00168	BUCKET::	.BLKB	2916
00CCC	LSTPTR::	.BLKB	4
00CDO	INDLVL::	.BLKB	4
00CD4	LSTSTK::	.BLKB	44
00000000	00D00	NDXPOL::	.LONG 0
00000000	00D04	NDXSGE::	.LONG 0
00000000	00D08	NDXSGF::	.LONG 0
00000000	00D0C	XTNPOL::	.LONG 0
00000000	00D10	XTNCNT::	.LONG 0
00000000	00D14	XTNLSP::	.LONG 0
00000000	00D18	XTNLSX::	.LONG 0
00000000	00D1C	XTNSGP::	.LONG 0
00000000	00D20	XTNTAB::	.LONG 0
00000000	00D24	XPAGEN::	.LONG 0
00000000	00D28	BOOKID::	.LONG 0
00000000	00D2C	PAGENO::	.LONG 0
00D30	ALLOWD::	.BLKB	4
00D34	LCOUNT::	.BLKB	4
00D38	RCOUNT::	.PLKB	4
00D3C	TCOUNT::	.BLKB	4
00D40	LTYPE::	.BLKB	328
00E88	LLINES::	.BLKB	656
01118	RTYPE::	.BLKB	328
01260	RLINES::	.BLKB	656
014F0	TTYPE::	.BLKB	328
01638	TLINES::	.BLKB	656

```

TAB== 9
TMSCOL== 39
RINTES== 28

```

.....


```

MAXLST== 10
MAXLIN== 80
$STR$DESC= CMDBLK+32
$STR$BIN_DESC= CMDBLK+32
$STR$DESC= CMDBLK+40
$STR$BIN_DESC= CMDBLK+40
$STR$DESC= CMDBLK+48
$STR$BIN_DESC= CMDBLK+48
$STR$DESC= CMDBLK+56
$STR$BIN_DESC= CMDBLK+56
$STR$DESC= CMDBLK+72
$STR$BIN_DESC= CMDBLK+72
$STR$DESC= CMDBLK+64
$STR$BIN_DESC= CMDBLK+64
$STR$DESC= XPLBLK+4
$STR$BIN_DESC= XPLBLK+4
$STR$DESC= XPLBLK+12
$STR$BIN_DESC= XPLBLK+12
    
```

.PSECT \$CODE\$,NOWRT,2

			0004 00000	.ENTRY	NDXINI, Save R2	: 0715
	52	00000000'	EF 9E 00002	MOVAB	CMDBLK, R2	: 0752
			62 D4 00009	CLRL	CMDBLK	: 0753
20	A2	020E0000	8F D0 0000B	MOVL	#34471936, \$STR\$DESC	: 0754
		24	A2 D4 00013	CLRL	\$STR\$DESC+4	: 0755
28	A2	020E0000	8F D0 00016	MOVL	#34471936, \$STR\$DESC	: 0756
		2C	A2 D4 0001E	CLRL	\$STR\$DESC+4	: 0757
30	A2	020E0000	8F D0 00021	MOVL	#34471936, \$STR\$DESC	: 0766
		34	A2 D4 00029	CLRL	\$STR\$DESC+4	: 0771
38	A2	020E0000	8F D0 0002C	MOVL	#34471936, \$STR\$DESC	: 0772
		3C	A2 D4 00034	CLRL	\$STR\$DESC+4	: 0773
48	A2	020E0000	8F D0 00037	MOVL	#34471936, \$STR\$DESC	: 0778
		4C	A2 D4 0003F	CLRL	\$STR\$DESC+4	: 0780
40	A2	020E0000	8F D0 00042	MOVL	#34471936, \$STR\$DESC	: 0781
		44	A2 D4 0004A	CLRL	\$STR\$DESC+4	: 0782
50	A2		01 8A 0004D	BICB2	#1, XPLBLK	: 0778
54	A2	020E0000	8F D0 00051	MOVL	#34471936, \$STR\$DESC	: 0785
		58	A2 D4 00059	CLRL	\$STR\$DESC+4	: 0781
5C	A2	02CE0000	8F D0 0005C	MOVL	#34471936, \$STR\$DESC	: 0782
		60	A2 D4 00064	CLRL	\$STR\$DESC+4	: 0778
			50 D4 00067	CLRL	I	: 0780
51		0D94	C240 7E 00069	MOVAQ	LLINES[I], R1	: 0781
61	020E0000		8F D0 0006F	MOVL	#34471936, (R1)	: 0782
		04	A1 D4 00076	CLRL	4(R1)	: 0778
51		116C	C240 7E 00079	MOVAQ	RLINES[I], R1	: 0785
61	020E0000		8F D0 0007F	MOVL	#34471936, (R1)	: 0781
		04	A1 D4 00086	CLRL	4(R1)	: 0782
51		1544	C240 7E 00089	MOVAQ	TLINES[I], R1	: 0778
61	020E0000		8F D0 0008F	MOVL	#34471936, (R1)	: 0785
		04	A1 D4 00096	CLRL	4(R1)	: 0781
C8	50	00000051	8F F3 00099	AOBLEQ	#81, 1, 1\$: 0778
			04 000A1	RET		: 0785

; Routine Size: 162 bytes, Routine Base: \$CODE\$ + 0000

NDXINI
V04-000

NDXINI -- Once only initialization and global d 16-Sep-1984 01:02:31
GLOBAL ROUTINE NDXINI -- Once only initializati 14-Sep-1984 13:07:13

H 10

VAX-11 Bliss-32 V4.0-742
[RUNOFF.SRC]NDXINI.BLI;1

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(3)

ND
VO

: 254 0786 1
: 255 0787 1 END ! End of module
: 256 0788 0 ELUDOM

PSECT SUMMARY

Name	Bytes	Attributes
\$GLOBALS	6344	NOVEC, WRT, RD, NOEXE, NOSHR, LCL, REL, CON, NOPIC, ALIGN(2)
\$CODES	162	NOVEC, NOWRT, RD, EXE, NOSHR, LCL, REL, CON, NOPIC, ALIGN(2)
. ABS .	0	NOVEC, NOWRT, NORD, NOEXE, NOSHR, LCL, ABS, CON, NOPIC, ALIGN(0)

Library Statistics

File	----- Symbols -----		Pages Mapped	Processing Time
	Total	Loaded Percent		
_\$255\$DUA28:[SYSLIB]XPORT.L32;1	590	130 22	252	00:00.2

COMMAND QUALIFIERS

BLISS/CHECK=(FIELD,INITIAL,OPTIMIZE)/LIS=LIS\$:NDXINI/OBJ=OBJ\$:NDXINI MSRC\$:NDXINI/UPDATE=(ENH\$:NDXINI)

: Size: 162 code + 6344 data bytes
: Run Time: 00:30.9
: Elapsed Time: 01:03.4
: Lines/CPU Min: 1530
: Lexemes/CPU-Min: 89295
: Memory Used: 155 pages
: Compilation Complete

0344 AH-BT13A-SE
VAX/VMS V4.0

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CONFIDENTIAL AND PROPRIETARY

Terminal 1	Terminal 2	Terminal 3	Terminal 4	Terminal 5	Terminal 6	Terminal 7	Terminal 8	Terminal 9	Terminal 10	Terminal 11	Terminal 12
Terminal 13	Terminal 14	Terminal 15	Terminal 16	Terminal 17	Terminal 18	Terminal 19	Terminal 20	Terminal 21	Terminal 22	Terminal 23	Terminal 24
Terminal 25	Terminal 26	Terminal 27	Terminal 28	Terminal 29	Terminal 30	Terminal 31	Terminal 32	Terminal 33	Terminal 34	Terminal 35	Terminal 36
Terminal 37	Terminal 38	Terminal 39	Terminal 40	Terminal 41	Terminal 42	Terminal 43	Terminal 44	Terminal 45	Terminal 46	Terminal 47	Terminal 48
Terminal 49	Terminal 50	Terminal 51	Terminal 52	Terminal 53	Terminal 54	Terminal 55	Terminal 56	Terminal 57	Terminal 58	Terminal 59	Terminal 60
Terminal 61	Terminal 62	Terminal 63	Terminal 64	Terminal 65	Terminal 66	Terminal 67	Terminal 68	Terminal 69	Terminal 70	Terminal 71	Terminal 72
Terminal 73	Terminal 74	Terminal 75	Terminal 76	Terminal 77	Terminal 78	Terminal 79	Terminal 80	Terminal 81	Terminal 82	Terminal 83	Terminal 84
Terminal 85	Terminal 86	Terminal 87	Terminal 88	Terminal 89	Terminal 90	Terminal 91	Terminal 92	Terminal 93	Terminal 94	Terminal 95	Terminal 96
Terminal 97	Terminal 98	Terminal 99	Terminal 100	Terminal 101	Terminal 102	Terminal 103	Terminal 104	Terminal 105	Terminal 106	Terminal 107	Terminal 108
Terminal 109	Terminal 110	Terminal 111	Terminal 112	Terminal 113	Terminal 114	Terminal 115	Terminal 116	Terminal 117	Terminal 118	Terminal 119	Terminal 120
Terminal 121	Terminal 122	Terminal 123	Terminal 124	Terminal 125	Terminal 126	Terminal 127	Terminal 128	Terminal 129	Terminal 130	Terminal 131	Terminal 132