

NNN		NNN	CCCCCCCCCCCC	PPPPPPPPPPPP	
NNN		NNN	CCCCCCCCCCCC	PPPPPPPPPPPP	
NNN		NNN	CCCCCCCCCCCC	PPPPPPPPPPPP	
NNN		NNN	CCC	PPP	PPP
NNN		NNN	CCC	PPP	PPP
NNN		NNN	CCC	PPP	PPP
NNNNNN		NNN	CCC	PPP	PPP
NNNNNN		NNN	CCC	PPP	PPP
NNNNNN		NNN	CCC	PPP	PPP
NNN	NNN	NNN	CCC	PPPPPPPPPPPP	
NNN	NNN	NNN	CCC	PPPPPPPPPPPP	
NNN	NNN	NNN	CCC	PPPPPPPPPPPP	
NNN	NNNNNN	NNN	CCC	PPP	
NNN	NNNNNN	NNN	CCC	PPP	
NNN	NNNNNN	NNN	CCC	PPP	
NNN	NNN	NNN	CCC	PPP	
NNN	NNN	NNN	CCC	PPP	
NNN	NNN	NNN	CCC	PPP	
NNN	NNN	NNN	CCCCCCCCCCCC	PPP	
NNN	NNN	NNN	CCCCCCCCCCCC	PPP	
NNN	NNN	NNN	CCCCCCCCCCCC	PPP	

```

NN      NN      CCCCCCCC  PPPPPPPP  TTTTTTTTTT  EEEEEEEEEEE  RRRRRRRR  MM      MM      IIIIII  000000
NN      NN      CCCCCCCC  PPPPPPPP  TTTTTTTTTT  EEEEEEEEEEE  RRRRRRRR  MM      MM      IIIIII  000000
NN      NN      CC      PP      PP      TT      EE      RR      RR      MM      MM      II      00      00
NN      NN      CC      PP      PP      TT      EE      RR      RR      MM      MM      II      00      00
NNNN      NN      CC      PP      PP      TT      EE      RR      RR      MM      MM      II      00      00
NNNN      NN      CC      PP      PP      TT      EE      RR      RR      MM      MM      II      00      00
NN      NN      CC      PPPPPPPP  TT      EE      RRRRRRRR  MM      MM      II      00      00
NN      NN      CC      PPPPPPPP  TT      EE      RRRRRRRR  MM      MM      II      00      00
NN      NN      CC      PP      TT      EE      RR      RR      MM      MM      II      00      00
NN      NN      CC      PP      TT      EE      RR      RR      MM      MM      II      00      00
NN      NN      CC      PP      TT      EE      RR      RR      MM      MM      II      00      00
NN      NN      CC      PP      TT      EE      RR      RR      MM      MM      II      00      00
NN      NN      CC      PP      TT      EE      RR      RR      MM      MM      II      00      00
NN      NN      CC      PP      TT      EE      RR      RR      MM      MM      II      00      00
NN      NN      CCCCCCCC  PP      TT      EEEEEEEEEEE  RR      RR      MM      MM      IIIIII  000000
NN      NN      CCCCCCCC  PP      TT      EEEEEEEEEEE  RR      RR      MM      MM      IIIIII  000000

LL      IIIIII  SSSSSSSS
LL      IIIIII  SSSSSSSS
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      II      SS
LLLLLLLLLLLL  IIIIII  SSSSSSSS
LLLLLLLLLLLL  IIIIII  SSSSSSSS

```



```
0001 0 XTITLE 'Terminal I/O'
0002 0 MODULE NCPTERMIO (IDENT = 'V04-000',
0003 0 ADDRESSING_MODE(EXTERNAL=GENERAL),
0004 0 ADDRESSING_MODE(NONEXTERNAL=GENERAL)) =
0005 1 BEGIN
0006 1
0007 1
0008 1 *****
0009 1 *
0010 1 * COPYRIGHT (c) 1978, 1980, 1982, 1984 BY
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0026 1 * SOFTWARE ON EQUIPMENT WHICH IS NOT SUPPLIED BY DIGITAL.
0027 1 *
0028 1 *
0029 1 *****
0030 1
0031 1
0032 1 ++
0033 1 FACILITY: NCP Network Control Program
0034 1
0035 1 ABSTRACT:
0036 1
0037 1 NCP Terminal I/O Data and Routines
0038 1
0039 1 ENVIRONMENT: VAX/VMS Operating System
0040 1
0041 1 AUTHOR: Darrell Duffy , CREATION DATE: 17-August-1979
0042 1
0043 1 MODIFIED BY:
0044 1
0045 1 V03-002 PRD0056 Paul R. DeStefano 05-Feb-1984
0046 1 Verify no longer needed in NCP$READ_LINE routine now
0047 1 that it's done by DCL.
0048 1
0049 1 V03-001 RPG0001 Bob Grosso 22-Feb-1983
0050 1 Stop upcasing anything in the command line which has
0051 1 been quoted.
0052 1
0053 1 V001 TMH0001 Tim Halvorsen 28-Jul-1981
0054 1 Add general addressing.
0055 1 --
```

```
: 57      0056 1 %SBTTL 'Definitions'
: 58      0057 1
: 59      0058 1
: 60      0059 1  TABLE OF CONTENTS:
: 61      0060 1
: 62      0061 1
: 63      0062 1  FORWARD ROUTINE
: 64      0063 1
: 65      0064 1      NCP$READ_LINE,
: 66      0065 1      NCP$WRITE_LINE,
: 67      0066 1      ;
: 68      0067 1
: 69      0068 1
: 70      0069 1  INCLUDE FILES:
: 71      0070 1
: 72      0071 1
: 73      0072 1  LIBRARY 'OBJ$:NCPLIBRY.L32';
: 74      0073 1  LIBRARY 'SYS$LIBRARY:STARLET.L32';
: 75      0074 1
: 76      0075 1
: 77      0076 1  MACROS:
: 78      0077 1
: 79      0078 1
: 80      0079 1
: 81      0080 1  EQUATED SYMBOLS:
: 82      0081 1
: 83      0082 1
: 84      0083 1
: 85      0084 1
: 86      0085 1  OWN STORAGE:
: 87      0086 1
: 88      0087 1
: 89      0088 1
: 90      0089 1
: 91      0090 1  FABs and RABs for RMS I/O
: 92      0091 1
: 93      0092 1
: 94      0093 1  OWN
: 95      P 0094 1      SYSINFAB:$FAB(
: 96      P 0095 1          FAC = (GET,PUT),
: 97      P 0096 1          FNM = 'SYS$INPUT',
: 98      P 0097 1          )
: 99      P 0098 1      SYSINRAB:$RAB(
100     P 0099 1          RAC = SEQ,
101     P 0100 1          ROP = (PMT),
102     P 0101 1          FAB = SYSINFAB
103     P 0102 1          )
104     P 0103 1      SYSOUTFAB:$FAB(
105     P 0104 1          RAT = (CR),
106     P 0105 1          FAC = PUT,
107     P 0106 1          FNM = 'SYS$OUTPUT',
108     P 0107 1          )
109     P 0108 1      SYSOUTRAB:$RAB(
110     P 0109 1          RAC = SEQ,
111     P 0110 1          FAB = SYSOUTFAB
112     P 0111 1          )
113     P 0112 1          ;
```

```
! Read a line of sysinput
! Write a line to sysoutput
```


NCPTERMIO
V04-000

Terminal I/O
Definitions

L 15
16-Sep-1984 01:54:59
14-Sep-1984 12:48:33

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[NCP.SRC]NCPTERMIO.B32;1

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(2)

:	114	0113	1	
:	115	0114	1	:
:	116	0115	1	:
:	117	0116	1	:
:	118	0117	1	:

EXTERNAL REFERENCES:

```

: 120 0118 1 %SBTTL 'NCP$INIT_TRMIO Initialize Terminal I/O'
: 121 0119 1 GLOBAL ROUTINE NCP$INIT_TRMIO = !
: 122 0120 1
: 123 0121 1 ++
: 124 0122 1 FUNCTIONAL DESCRIPTION:
: 125 0123 1
: 126 0124 1 Open and connect terminal input and output files
: 127 0125 1
: 128 0126 1 FORMAL PARAMETERS:
: 129 0127 1
: 130 0128 1 NONE
: 131 0129 1
: 132 0130 1 IMPLICIT INPUTS:
: 133 0131 1
: 134 0132 1 NONE
: 135 0133 1
: 136 0134 1 IMPLICIT OUTPUTS:
: 137 0135 1
: 138 0136 1 NONE
: 139 0137 1
: 140 0138 1 ROUTINE VALUE:
: 141 0139 1 COMPLETION CODES:
: 142 0140 1
: 143 0141 1 RMS return if something failed
: 144 0142 1
: 145 0143 1 SIDE EFFECTS:
: 146 0144 1
: 147 0145 1 SYSINRAB and SYSOUTRAB Open
: 148 0146 1
: 149 0147 1 --
: 150 0148 1
: 151 0149 2 BEGIN
: 152 0150 2
: 153 0151 2 $OPEN (FAB=SYSINFAB); ! Open and connect input
: 154 0152 2 $OPEN (FAB=SYSOUTFAB); ! and output files
: 155 0153 2 $CONNECT (RAB=SYSINRAB);
: 156 0154 3 $CONNECT (RAB=SYSOUTRAB)
: 157 0155 3
: 158 0156 1 END;

```

.TITLE NCPTERMIO Terminal I/O
.IDENT \V04-000\

.PSECT \$SPLITS,NOWRT,NOEXE,2

54	54	55	50	4E	49	24	53	59	53	00000	P.AAA:	.ASCII	\SYSSINPUT\	:
	55	50	54	55	4F	24	53	59	53	00009	P.AAB:	.ASCII	\SYSSOUTPUT\	:

.PSECT \$OWNS,NOEXE,2

	03	00000	SYSINFAB:		
		50	00001	.BYTE	3
		0000	00002	.BYTE	80
		00000000	00004	.WORD	0
		00000000	00008	.LONG	0
				.LONG	0


```

00000000 0000C .LONG 0
00000000 00010 .LONG 0
0000 00014 .WORD 0
03 00016 .BYTE 3
00 00017 .BYTE 0
00000000 00018 .LONG 0
00 0001C .BYTE 0
00 0001D .BYTE 0
00 0001E .BYTE 0
02 0001F .BYTE 2
00000000 00020 .LONG 0
00000000 00024 .LONG 0
00000000 00028 .LONG 0
00000000 0002C .ADDRESS P.AAA
00000000 00030 .LONG 0
09 00034 .BYTE 9
00 00035 .BYTE 0
0000 00036 .WORD 0
00000000 00038 .LONG 0
0000 0003C .WORD 0
00 0003E .BYTE 0
00 0003F .BYTE 0
00000000 00040 .LONG 0
00000000 00044 .LONG 0
0000 00048 .WORD 0
00 0004A .BYTE 0
00 0004B .BYTE 0
00000000 0004C .LONG 0
01 00050 SYSINRAB:
44 00051 .BYTE 1
0000 00052 .BYTE 68
40000000 00054 .WORD 0
00000000 00058 .LONG 1073741824
00000000 0005C .LONG 0
0000# 00060 .WORD 0[3]
0000 00066 .WORD 0
00000000 00068 .LONG 0
0000 0006C .WORD 0
00 0006E .BYTE 0
00 0006F .BYTE 0
0000 00070 .WORD 0
0000 00072 .WORD 0
00000000 00074 .LONG 0
00000000 00078 .LONG 0
00000000 0007C .LONG 0
00000000 00080 .LONG 0
00 00084 .BYTE 0
00 00085 .BYTE 0
00 00086 .BYTE 0
00 00087 .BYTE 0
00000000 00088 .LONG 0
00000000 0008C .ADDRESS SYSINFAB
00000000 00090 .LONG 0
03 00094 SYSOUTFAB:
50 00095 .BYTE 3
      .BYTE 80

```

.....

.....

0000	00096	.WORD	0
00000000	00098	.LONG	0
00000000	0009C	.LONG	0
00000000	000A0	.LONG	0
00000000	000A4	.LONG	0
0000	000A8	.WORD	0
01	000AA	.BYTE	1
00	000AB	.BYTE	0
00000000	000AC	.LONG	0
00	000B0	.BYTE	0
00	000B1	.BYTE	0
02	000B2	.BYTE	2
02	000B3	.BYTE	2
00000000	000B4	.LONG	0
00000000	000B8	.LONG	0
00000000	000BC	.LONG	0
00000000	000C0	.ADDRESS	P.AAB
00000000	000C4	.LONG	0
0A	000C8	.BYTE	10
00	000C9	.BYTE	0
0000	000CA	.WORD	0
00000000	000CC	.LONG	0
0000	000D0	.WORD	0
00	000D2	.BYTE	0
00	000D3	.BYTE	0
00000000	000D4	.LONG	0
00000000	000D8	.LONG	0
0000	000DC	.WORD	0
00	000DE	.BYTE	0
00	000DF	.BYTE	0
00000000	000E0	.LONG	0
01	000E4	SYSOUTRAB:	
		.BYTE	1
44	000E5	.BYTE	68
0000	000E6	.WORD	0
00000000	000E8	.LONG	0
00000000	000EC	.LONG	0
00000000	000F0	.LONG	0
0000#	000F4	.WORD	0[3]
0000	000FA	.WORD	0
00000000	000FC	.LONG	0
0000	00100	.WORD	0
00	00102	.BYTE	0
00	00103	.BYTE	0
0000	00104	.WORD	0
0000	00106	.WORD	0
00000000	00108	.LONG	0
00000000	0010C	.LONG	0
00000000	00110	.LONG	0
00000000	00114	.LONG	0
00	00118	.BYTE	0
00	00119	.BYTE	0
00	0011A	.BYTE	0
00	0011B	.BYTE	0
00000000	0011C	.LONG	0
00000000	00120	.ADDRESS	SYSOUTFAB
00000000	00124	.LONG	0

.....


```

001C 00000
54 00000000G 00 9E 00002
53 00000000G 00 9E 00009
52 00000000' 00 9E 00010
        52 DD 00017
63        01 FB 00019
        0094 C2 9F 0001C
63        01 FB 00020
        50 A2 9F 00023
64        01 FB 00026
        00E4 C2 9F 00029
64        01 FB 0002D
        04 00030

```

.EXTRN SYSS\$OPEN, SYSS\$CONNECT

.PSECT \$CODE\$,NOWRT,2

```

.ENTRY NCP$INIT_TRMIO, Save R2,R3,R4
MOVAB SYSS$CONNECT, R4
MOVAB SYSS$OPEN, R3
MOVAB SYSINFAB, R2
PUSHL R2
CALLS #1, SYSS$OPEN
PUSHAB SYSOUTFAB
CALLS #1, SYSS$OPEN
PUSHAB SYSINRAB
CALLS #1, SYSS$CONNECT
PUSHAB SYSOUTRAB
CALLS #1, SYSS$CONNECT
RET

```

```

: 0119
:
: 0151
: 0152
: 0153
: 0154
: 0156

```

; Routine Size: 49 bytes, Routine Base: \$CODE\$ + 0000


```
160 0157 1 %SBTTL 'NCP$READ_LINE Read a line from SYSS$INPUT'
161 0158 1 GLOBAL ROUTINE NCP$READ_LINE (INP_DSC, PMT_DSC, RTN_DSC) = !
162 0159 1
163 0160 1 ++
164 0161 1 FUNCTIONAL DESCRIPTION:
165 0162 1
166 0163 1 Read a line from sys$input and return it in a line buffer.
167 0164 1
168 0165 1 FORMAL PARAMETERS:
169 0166 1
170 0167 1 INP_DSC Address of descriptor of the line buffer
171 0168 1 PMT_DSC Address of descriptor of prompt string
172 0169 1 RTN_DSC Address of the descriptor for returned line
173 0170 1
174 0171 1 IMPLICIT INPUTS:
175 0172 1
176 0173 1 SYSINRAB File open and connected
177 0174 1
178 0175 1 IMPLICIT OUTPUTS:
179 0176 1
180 0177 1 NONE
181 0178 1
182 0179 1 ROUTINE VALUE:
183 0180 1 COMPLETION CODES:
184 0181 1
185 0182 1 RMS status from $GET
186 0183 1
187 0184 1 SIDE EFFECTS:
188 0185 1
189 0186 1 NONE
190 0187 1
191 0188 1 --
192 0189 1
193 0190 2 BEGIN
194 0191 2
195 0192 2 MAP
196 0193 2 INP_DSC: REF VECTOR [2], ! Input line buffer dsc
197 0194 2 RTN_DSC: REF VECTOR [2], ! Returned line dsc
198 0195 2 PMT_DSC: REF VECTOR [2], ! Prompt string descriptor
199 0196 2 ;
200 0197 2
201 0198 2 LOCAL
202 0199 2 CHAR, ! Char temporary
203 0200 2 QUOTE_ON, ! Record beginning of quoted string in input line
204 0201 2 STATUS ! Hold status from $GET
205 0202 2 ;
206 0203 2
207 0204 2 SYSINRAB [RAB$B_PSZ] = .PMT_DSC [0]; ! Prompt size
208 0205 2 SYSINRAB [RAB$L_PBF] = .PMT_DSC [1]; ! Prompt address
209 0206 2
210 0207 2 SYSINRAB [RAB$L_UBF] = .INP_DSC [1]; ! Setup buffer in rab
211 0208 2 SYSINRAB [RAB$W_USZ] = .INP_DSC [0];
212 0209 2
213 0210 2 IF ! Obtain line and hold status
214 0211 2 NOT (STATUS = $GET (RAB = SYSINRAB))
215 0212 2 THEN RETURN .STATUS ! if an error occurred
216 0213 2 ;
```



```
217 0214 2
218 0215 2
219 0216 2
220 0217 2
221 0218 2
222 0219 2
223 0220 2
224 0221 2
225 0222 2
226 0223 2
227 0224 2
228 0225 2
229 0226 2
230 0227 2
231 0228 2
232 0229 2
233 0230 2
234 0231 2
235 0232 2
236 0233 2
237 0234 2
238 0235 2
239 0236 2
240 0237 2
241 0238 2
242 0239 2
243 0240 2
244 0241 2
245 0242 2
246 0243 2
247 0244 1

Convert the characters to upper case

QUOTE_ON = FALSE;
INCRA-DEX FROM .SYSINRAB [RAB$L-RBF] ! Limits of the input buffer
TO .SYSINRAB [RAB$L-RBF] +
.SYSINRAB [RAB$W-RSZ]

DO
BEGIN
CHAR = CH$RCHAR (CH$PTR (.DEX) ); ! Fetch a character
IF .CHAR EQLU "'" ! Check for quote and toggle flag
THEN QUOTE_ON = NOT .QUOTE_ON;

IF NOT .QUOTE_ON
THEN
IF .CHAR GEQU 'a' ! Check for lower case
AND .CHAR LEQU 'z'
THEN
CHAR = .CHAR - ('a' - 'A'); ! Reduce to upper case
CH$WCHAR (.CHAR, CH$PTR (.DEX) ) ! Write the character back
END;

RTN_DSC [0] = .SYSINRAB [RAB$W-RSZ]; ! Return the line descriptor
RTN_DSC [1] = .SYSINRAB [RAB$L-RBF];

RETURN .STATUS ! And the RMS status from $GET
END;
```

```
FC A7 04 A0 D0 00010
FO A7 04 A0 D0 00019
EC A7 60 B0 0001E
00000000G 00 CC A7 9F 00022
49 01 FB 00025
55 56 D4 0002F
53 F4 A7 D0 00031
55 EE A7 3C 00035
51 53 C1 00039
52 55 D0 0003D
22 26 11 00040
56 61 9A 00042 1$:
52 52 D1 00045
03 12 00048
56 56 D2 0004A

.EXTRN SYS$GET
.ENTRY NCP$READ_LINE, Save R2,R3,R4,R5,R6,R7 : 0158
MOVAB SYSINRAB+52, R7 : 0204
MOVL PMT_DSC, R0 : 0205
MOVB (R0), SYSINRAB+52 : 0207
MOVL 4(R0), SYSINRAB+48 : 0208
MOVL INP_DSC, R0 : 0211
MOVL 4(R0), SYSINRAB+36 : 0219
MOVW (R0), SYSINRAB+32 : 0220
PUSHAB SYSINRAB : 0222
CALLS #1, SYS$GET : 0220
BLBC STATUS, 5$ : 0225
CLRL QUOTE_ON : 0227
MOVL SYSINRAB+40, R5 : 0228
MOVZWL SYSINRAB+34, R3 :
ADDL3 R3, R5, R4 :
MOVL R5, DEX :
BRB 4$ :
MOVZBL (DEX), CHAR :
CMPL CHAR, #34 :
BNEQ 2$ :
MCOML QUOTE_ON, QUOTE_ON :
```

NCPTERMIO
V04-000

Terminal I/O
NCP\$READ_LINE Read a line from SYSS\$INPUT

F 16
16-Sep-1984 01:54:59
14-Sep-1984 12:48:33

VAX-11 Bliss-32 V4.0-742
[NCP.SRC]NCPTERMIO.B32;1

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00000061	15	56	E8	0004D	2\$:	BLBS	QUOTE_ON, 3\$	:	0230
	8F	52	D1	00050		CMPL	CHAR, -#97	:	0232
0000007A		0C	1F	00057		BLSSU	3\$	:	
	8F	52	D1	00059		CMPL	CHAR, #122	:	0233
		03	1A	00060		BGTRU	3\$	:	
	52	20	C2	00062		SUBL2	#32, CHAR	:	0235
	81	52	90	00065	3\$:	MOVB	CHAR, (DEX)+	:	0236
	54	51	D1	00068	4\$:	CMPL	DEX, R4	:	0220
		D5	1B	0006B		BLEQU	1\$	:	
	51	AC	D0	0006D		MOVL	RTN_DSC, R1	:	0240
	61	53	D0	00071		MOVL	R3, -(R1)	:	
04	A1	55	D0	00074		MOVL	R5, 4(R1)	:	0241
		04	00078	5\$:		RET		:	0244

; Routine Size: 121 bytes, Routine Base: \$CODE\$ + 0031

[illegible]

NCPTERMIO
V04-000

Terminal I/O
NCP\$WRITE_LINE Write a line to SYSS\$OUTPUT

; Routine Size: 32 bytes, Routine Base: \$CODE\$ + 00AA

H 16
16-Sep-1984 01:54:59
14-Sep-1984 12:48:33

VAX-11 Bliss-32 V4.0-742
[NCP.SRC]NCPTERMIO.B32;1

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```
293 0288 1 %SBTTL 'NCP$CMD_TERM_Q Is input device a terminal?'
294 0289 1 GLOBAL ROUTINE NCP$CMD_TERM_Q = !
295 0290 1
296 0291 1 ++
297 0292 1 FUNCTIONAL DESCRIPTION:
298 0293 1
299 0294 1 Return true if input device is a terminal,
300 0295 1 False otherwise.
301 0296 1
302 0297 1 FORMAL PARAMETERS:
303 0298 1
304 0299 1 NONE
305 0300 1
306 0301 1 IMPLICIT INPUTS:
307 0302 1
308 0303 1 NONE
309 0304 1
310 0305 1 IMPLICIT OUTPUTS:
311 0306 1
312 0307 1 NONE
313 0308 1
314 0309 1 ROUTINE VALUE:
315 0310 1 COMPLETION CODES:
316 0311 1
317 0312 1 NONE
318 0313 1
319 0314 1 SIDE EFFECTS:
320 0315 1
321 0316 1 NONE
322 0317 1
323 0318 1 --
324 0319 1
325 0320 2 BEGIN
326 0321 2
327 0322 2 IF .SYSINFAB [$FAB_DEV (TRM)]      ! Is the terminal bit set?
328 0323 2 THEN RETURN TRUE                ! Yes
329 0324 2 ELSE RETURN FALSE              ! No
330 0325 2
331 0326 1 END;
```

04 00000000' 00	0000 00000	.ENTRY NCP\$CMD_TERM_Q, Save nothing	: 0289
50	02 E1 00002	BBC #2, SYSINFAB+64, 1\$	: 0322
	01 D0 0000A	MOVL #1, R0	: 0324
	04 0000D	RET	:
	50 D4 0000E 1\$:	CLRL R0	:
	04 00010	RET	: 0326

; Routine Size: 17 bytes, Routine Base: \$CODE\$ + 00CA

```
333 0327 1 %SBTTL 'NCP$EMPTY_INP Is remainder of command blank'
334 0328 1 GLOBAL ROUTINE NCP$EMPTY_INP (DSC) = !
335 0329 1
336 0330 1 ++
337 0331 1 FUNCTIONAL DESCRIPTION:
338 0332 1
339 0333 1 Return true if remainder of command line is blank
340 0334 1 false otherwise.
341 0335 1
342 0336 1 FORMAL PARAMETERS:
343 0337 1
344 0338 1 DSC Address of descriptor of remainder of command
345 0339 1
346 0340 1 IMPLICIT INPUTS:
347 0341 1
348 0342 1 NONE
349 0343 1
350 0344 1 IMPLICIT OUTPUTS:
351 0345 1
352 0346 1 NONE
353 0347 1
354 0348 1 ROUTINE VALUE:
355 0349 1 COMPLETION CODES:
356 0350 1
357 0351 1 Success or failure
358 0352 1
359 0353 1 SIDE EFFECTS:
360 0354 1
361 0355 1 NONE
362 0356 1
363 0357 1 --
364 0358 1
365 0359 2 BEGIN
366 0360 2
367 0361 2 MAP
368 0362 2 DSC : REF VECTOR [2] ! Descriptor of command line
369 0363 2 ;
370 0364 2
371 0365 2 LITERAL
372 0366 2 SPACE = 32, ! Values of character codes
373 0367 2 TAB = 9
374 0368 2 ;
375 0369 2
376 0370 2 LOCAL
377 0371 2 LIN_ADR, ! Line address tmp
378 0372 2 END_ADR, ! End address
379 0373 2 CHAR ! Character temporary
380 0374 2 ;
381 0375 2
382 0376 2 END_ADR = .DSC [1] + .DSC [0] - 1; ! Set end address
383 0377 2 LIN_ADR = .DSC [1]; ! Start address
384 0378 2
385 0379 2 WHILE .LIN_ADR LEQA .END_ADR ! For the buffer
386 0380 2 DO
387 0381 2 BEGIN ! Look for a space or a tab
388 0382 2 CHAR = CH$RCHAR A (LIN_ADR); ! Fetch a character and advance
389 0383 2 IF .CHAR NEQ SPACE AND
```


NCPTERMIO
V04-000

Terminal I/O
NCP\$EMPTY_INP Is remainder of command blank

K 16
16-Sep-1984 01:54:59
14-Sep-1984 12:48:33

VAX-11 Bliss-32 V4.0-742
[NCP.SRC]NCPTERMIO.B32;1

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```
: 390      0384 3      .CHAR NEQ TAB
: 391      0385 3      THEN RETURN FALSE
: 392      0386 3      END
: 393      0387 2      ;
: 394      0388 2      RETURN TRUE
: 395      0389 2
: 396      0390 1      END;
```

! If not, then not empty
! An empty line

			0004 00000	.ENTRY NCP\$EMPTY_INP, Save R2	: 0328
			AC D0 00002	MOVL DSC, R1	: 0376
50	04	51	61 C1 00006	ADDL3 (R1), 4(R1), R0	
		A1	50 D7 0000B	DECL END_ADR	
		51	04 A1 D0 0000D	MOVL 4(RT), LIN_ADR	: 0377
		50	51 D1 00011 1\$:	CMPL LIN_ADR, END_ADR	: 0379
			0F 1A 00014	BGTRU 2\$	
		52	81 9A 00016	MOVZBL (LIN_ADR)+, CHAR	: 0382
		20	52 D1 00019	CMPL CHAR, #32	: 0383
			F3 13 0001C	BEQL 1\$	
		09	52 D1 0001E	CMPL CHAR, #9	: 0384
			EE 13 00021	BEQL 1\$	
		50	04 11 00023	BRB 3\$	: 0385
			01 D0 00025 2\$:	MOVL #1, R0	: 0388
			04 00028	RET	
			50 D4 00029 3\$:	CLRL R0	: 0390
			04 0002B	RET	

; Routine Size: 44 bytes, Routine Base: \$CODE\$ + 00DB

NCPTermIO
V04-000

Terminal I/O
NCP\$EMPTY_INP Is remainder of command blank

L 16
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[NCP.SRC]NCPTermIO.B32;1

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: 398
: 399
: 400
: 401
0391 1
0392 1
0393 1 END
0394 0 ELUDOM

!End of module

PSECT SUMMARY

Name	Bytes	Attributes
\$SPLITS	19	NOVEC,NOWRT, RD ,NOEXE,NOSHR, LCL, REL, CON,NOPIC,ALIGN(2)
\$OWNS	296	NOVEC, WRT, RD ,NOEXE,NOSHR, LCL, REL, CON,NOPIC,ALIGN(2)
\$CODES	263	NOVEC,NOWRT, RD , EXE,NOSHR, LCL, REL, CON,NOPIC,ALIGN(2)

Library Statistics

File	----- Total	Symbols Loaded	----- Percent	Pages Mapped	Processing Time
_\$255\$DUA28:[NCP.OBJ]NCPLIBRY.L32;1	373	4	1	52	00:00.1
_\$255\$DUA28:[SYSLIB]STARLET.L32;1	9776	39	0	581	00:01.5

COMMAND QUALIFIERS

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

: Size: 263 code + 315 data bytes
: Run Time: 00:10.8
: Elapsed Time: 00:39.7
: Lines/CPU Min: 2197
: Lexemes/CPU-Min: 29392
: Memory Used: 86 pages
: Compilation Complete

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