B VT Emulation

This appendix lists features and modes of the VT standard that are not supported by NCSA Telnet for the Macintosh, key mapping to emulate VT keys, and the escape codes sent by NCSA Telnet for certain codes in various emulation modes.

This appendix is intended as a reference to NCSA Telnet's implementation of VT emulation, not as the definitive source for information regarding the VT series of terminals.

VT Compatibility

NCSA Telnet does not support:

- double-height or double-width characters
- the VT52 mode

Key Mapping

NCSA Telnet does not emulate the following VT200 keys: F1, F2, F3, F4, and F5.

NCSA Telnet maps F6 through F20 on the VT200 keyboard to F1 through F15 on the Apple Extended Keyboard.

NCSA Telnet maps PF1 through PF4 on the VT200 keyboard to the top row of keys on the Apple numeric keypad (CLEAR, =, /, *).

Escape Codes

NCAS Telnet always sends the CSI and SS3 control characters using their seven-bit extensions. Therefore, substitute ESC [(1B 5B) for CSI and ESC O (1B 4F) for SS3 in the following tables.

The keycode tables below follow the divisions used in the VT200 manual.

Editing Keys

VT Key Name	VT200 Mode	VT100 Mode
HELP (find)	9B 31 7E CSI 1 ~	
HOME (Insert Here)	9B 32 7E CSI 2 ~	NCSA Telnet sends the VT220 codes for these keys while in VT100 mode, even though these keys did not exist on the VT100.
PAGEUP (Remove)	9B 33 7E CSI 3 ~	
DEL (Select)	9B 34 7E CSI 4 ~	
END (Prev Screen)	9B 35 7E CSI 5 ~	
PAGEDOWN (Next Screen)	9B 36 7E CSI 6 ~	

Cursor Control Keys

Cursor control keys are the same for VT200 and VT100 emulation.

Key	Reset Normal Mode	Set Application Mode <- Cursor Key Mode
UpArrow	9B 41	8F 41
	CSI A	SS3 A
DownArrow	9B 42	8F 42
	CSI B	SS3 B
RightArrow	9B 43	8F 43
	CSI C	SS3 C
LeftArrow	9B 44	8F 44
	CSI D	SS3 D

Auxiliary Keypad Codes

Auxiliary keypad codes are the same for VT200 and VT100 emulation.

Key	Keypad Numeric Mode	Keypad Application Mode
0	30	8F 70
	0	SS3 p
1	31	8F 71
	1	SS3 q
2	32	8F 72
	2	SS3 r
3	33	8F 73
	3	SS3 s
4	34	8F 74
	4	SS3 t
5	35	8F 75
	5	SS3 u
6	36	8F 76
	6	SS3 v
7	37	8F 77
	7	SS3 w
8	38	8F 78
	8	SS3 x
9	39	8F 79
	9	SS3 y
-	2D	8F 6D
	-	SS3 m
+ (,)	2C	8F 6C
	,	SS3 l
.	2E	8F 6E
	.	SS3 n
Enter	**	8F 4D
	**	SS3 M
Clear (PF1)	8F 50	8F 50
	SS3 P	SS3 P
= (PF2)	8F 51	8F 51
	SS3 Q	SS3 Q
/ (PF3)	8F 52	8F 52
	SS3 R	SS3 R
* (PF4)	8F 53	8F 53
	SS3 Q	SS3 Q

Top-Row Function Keys

VT Key Name	VT200 Mode Code	VT100 Mode Code
F1 (F6)	9B 31 37 7E CSI 1 7 ~	
F2 (F7)	9B 31 38 7E CSI 1 8 ~	NCSA Telnet sends the VT220 codes for these keys while in VT100 mode, even though these keys did not exist on the VT100.
F3 (F8)	9B 31 39 7E CSI 1 9 ~	
F4 (F9)	9B 32 30 7E CSI 2 0 ~	
F5 (F10)	9B 32 31 7E CSI 2 1 ~	
F6 (F11)	9B 32 33 7E CSI 2 3 ~	
F7 (F12)	9B 32 34 7E CSI 2 4 ~	
F8 (F13)	9B 32 35 7E CSI 2 5 ~	
F9 (F14)	9B 32 36 7E CSI 2 6 ~	
F10 (F15/Help)	9B 32 38 7E CSI 2 8 ~	
F11 (F16/Do)	9B 32 39 7E CSI 2 9 ~	
F12 (F17)	9B 33 31 7E CSI 3 1 ~	
F13 (F18)	9B 33 32 7E CSI 3 2 ~	
F14 (F19)	9B 33 33 7E CSI 3 3 ~	
F15 (F20)	9B 33 34 7E CSI 3 4 ~	