NAME

tabs – set tabs on terminal

SYNOPSIS

tabs [tabspec] [**+f**] [**+m**n] [**+l**n] [**+t**type] [**+q**]

DESCRIPTION

Tabs sets the tab stops on the user's terminal according to the tab specification *tabspec*, after clearing any previous settings. The user must of course be logged in on a terminal with remotely-settable hardware tabs, including the DASI450 (DIABLO 1620 or XEROX 1700), GSI300 (DTC300 or DASI300), DASI300S (DTC300S), HP2640B (HP2640A, HP2644A, HP2645A, etc.), TELETYPE® Model 40/2, and General Electric TermiNet terminals.

Users of TermiNet terminals should be aware that they behave in a different way than most other terminals for some tab settings; the first number in a list of tab settings becomes the *left margin* on a TermiNet terminal. Thus, any list of tab numbers whose first element is other than 1 causes a margin to be left by a TermiNet, but not by other terminals. A tab list beginning with 1 causes the same effect regardless of terminal type. It is also possible to set a left margin on the DASI450 and DASI300S, although in a different way.

Four types of tab specification are accepted for *tabspec:* 'canned', repetitive, arbitrary, and file. If no arguments are given, the default value is **–8**, i.e., UNIX 'standard' tabs. The lowest column number is 1 and the highest is 158. Note that for *tabs,* column 1 always refers to the leftmost column on a terminal, even one whose column markers begin at 0, e.g., the DASI300, DASI300S, and DASI450.

–*code*   Gives the name of one of a set of 'canned' tabs. The legal codes and their meanings are as follows:

–a   1,10,16,36,72
Assembler, IBM S/370, first format

–a2   1,10,16,40,72
Assembler, IBM S/370, second format

–c   1,8,12,16,20,55
COBOL, normal format

–c2   1,6,10,14,49
COBOL compact format (columns 1–6 omitted). Using this code, the first typed character corresponds to card column 7, one space gets you to column 8, and a tab reaches column 12. In order to get *send(I)* to prepend the blanks at the beginning, files using this tab setup should include a format specification (see *fspec*(V)) as follows:
<:t–c2 m6 s66 d:>

–c3   1,6,10,14,18,22,26,30,34,38,42,46,50,54,58,62,67
COBOL compact format (columns 1–6 omitted), with more tabs than **–c2.** THIS IS THE RECOMMENDED FORMAT FOR COBOL. The appropriate format specification is:
<:t–c3 m6 s66 d:>

–f   1,7,11,15,19,23
FORTRAN

–p   1,5,9,13,17,21,25,29,33,37,41,45,49,53,57,61
PL/I

−s   1,10,55
SNOBOL

−u   1,12,20,44
UNIVAC 1100 Assembler

In addition to these 'canned' formats, three other types exist:

−*n*   A repetitive specification requests tabs at columns $1+n$, $1+2*n$, etc. Note that such a setting leaves a left margin of n columns on TermiNet terminals *only*. Of particular importance is the value **−8**: this represents the UNIX 'standard' tab setting, and is the most likely tab setting to be found at a terminal. It is required for use with the *nroff*(I) **−h** option for high-speed output (about 10% speed increase). Another special case is the value **−0**, implying no tabs at all.

n1,n2,...   The arbitrary format permits the user to type any chosen set of numbers, separated by commas, in ascending order. Up to 40 numbers are allowed. The maximum tab value accepted is 158. If any number (except the first one) is preceded by a plus sign, it is taken as an increment to be added to the previous value. Thus, the tab lists 1,10,20,30 and 1,10,+10,+10 are considered identical.

−−*file*   If the name of a file is given, *tabs* reads the first line of the file, searching for a format specification (see *fspec(V)*). If it finds one there, it sets the tab stops according to it, otherwise it sets them as **−8**. If an actual format specification is found in the file, it is printed at the terminal to remind the user what it is, unless the **+f** flag is also included to suppress this output. This type of specification may be used to make sure that a tabbed file is printed with correct tab settings, and would be used with the *pr(I)* command:

     tabs −−file; **pr** file

Any of the following may be used also; if a given flag occurs more than once, the last value given takes effect.

+f   If the −−*file* type of tab specification is used and this option given, no tab specification is printed at the terminal, but the tab stops are set. This option is most useful when *tabs* is invoked from a shell procedure or another command, rather than directly from a terminal. This option has no effect unless a −−*file* form of specification is used.

+l*n*   The length argument gives the number of the rightmost column at which a tab will be set by a repetitive−style specification. The default value is 132, but may be different if the **+t** argument implies a more appropriate value for the specific type of terminal being used. When examining printed output obtained from another computer, it is helpful to have tabs across the entire width of the terminal. Maximum usable values of n are 118 (TermiNet), 132 (any DASI in 10-pitch mode), 158 (any DASI in 12-pitch mode), and 80 (HP2640). Although *tabs* will accept larger values without diagnostics, using them may cause a terminal (especially a DASI) to behave strangely.

+m*n*   The margin argument may be used for TermiNet, DASI450, and DASI300S terminals. It causes all tabs to be moved over n columns by making column $n+1$ the left margin. If **+m** is given without a value of *n,* the value assumed is 10. For a TermiNet, the first value in the tab list should be 1, or the margin will move even further to the right.

     To reset the left margin of a DASI450 to the normal(leftmost) position, type:

     tabs +t450 +m0

     The margin on a DASI450 or DASI300S is reset only when the **+m** flag is given explicitly. The margin is not settable on a DASI300, and is settable on the DASI450 and DASI300S *only* when the **+t** option is used (see below).

+q   The ('quick') flag suppresses the emission of characters to clear previously set tabs. It can be used

if the terminal is know to be clear already, i.e., just after it has been powered up or reset.

+t*type*   The terminal type can be supplied to help *tabs* optimize its output for specific kinds of terminals, and is sometimes required when certain functions of some terminals are desired. This argument interacts with +**l** by setting different defaults for different terminals, and different maximum lengths. It interacts with +**m** because different methods must be used to set margins on the various terminals.

Given below are the possible cases for +**t** argument, listing argument value, maximum length, default length if +**l** is omitted, and notes. The notes give the following codes: 'S' for a short (several characters) clearing sequence, 'L' for a long sequence (about 60 characters), 'M' for a settable margin, and a list of the terminal types expected.

Value	Maximum	Default	S/L	M	Terminal(s)
+t300	158	132	L		GSI300 (DTC300 or DASI300)
+tgsi	"	"	"		"
+t300S	158	132	S	M	DASI300S (DTC300S)
+tgsis	"	"	"	"	"
+t450	158	132	S	M	DASI450 (DIABLO 1620 or XEROX 1700)
+t1620	"	"	"	"	"
+ttn	118	118	S	M	TermiNet 300 or 1200
+thp	80	80	L		HP2640A, HP2640B
+t40−2	80	80	S		TELETYPE 40/2
+t	158	132	S		any with settable tabs
omitted	158	132	L		any with settable tabs

Omitting the +**t** argument entirely will work for most situations. You should probably try to type the least that will work, and be more specific only when necessary.

Tab-setting is performed using the standard output.

DIAGNOSTICS

"illegal tabs" when arbitrary tabs are ordered incorrectly, or include any value greater than 158.
"illegal increment" when a zero or missing increment value is found in an arbitrary specification.
"unknown tab code" when a 'canned' code cannot be found.
"can't open" if −−file option used, and file can't be opened.
"file indirection" if −−file option used and the specification in that file points to yet another file. Indirection of this form is not permitted.

EXIT CODES

0 – normal
1 – for any error

SEE ALSO

fspec(V), nroff(I), reform(I), send(I)
GSI300(VII), DASI450(VII), HP2640(VII), TERMINET(VII)

BUGS

It is sad, but true, that it is often necessary to specify the terminal type. Various terminals use totally inconsistent ways of clearing tabs and setting margins. *Tabs* clears only 20 tabs (on terminals requiring a long sequence), but is willing to set 40.