

NAME

expand, **unexpand** — (de)tabulate files

SYNOPSIS

```
expand [-i] [-t width] [file]...
expand [-i] [-t stop,stop[,stop]...] [file]...
unexpand [-af] [-t width] [file]...
unexpand [-af] [-t stop,stop[,stop]...] [file]...
```

DESCRIPTION

Expands tab characters from each *file* (standard input stream if "-", the default), in order, writing the result to the standard output stream.

Each character except for the tab is copied verbatim. When a tab is encountered, it's replaced by spaces equal in number to the distance to the next *stop*; if it's beyond the final defined *stop*, it's replaced by a single space.

unexpand performs the equivalent processing, but inverse operation, coalescing runs of initial (but see **-a**) spaces and tabs before each *stop* into the minimal count of tabs and spaces yielding the same column. No processing is done beyond the final *stop*.

All characters have the width determined by the current locale, except the tab (the next stop) and backspace (**-1**, but not before the first column) Invalid multi-byte character sequences are taken to have null width.

OPTIONS

-t , --tabs= <i>width</i>	Lay out stops every <i>width</i> (default 8).
-t , --tabs= <i>stop,stop[,stop]...</i>	Set stops at the specified columns. Each <i>stop</i> must be further than the last. <i>stops</i> may be separated by the commas, spaces, and tabs. May also be specified as -t stop -t stop [-t stop]...
-i , --initial	Only expand tabs if they were preceded by exclusively blanks.
-a , --all	Also coalesce runs of at least two spaces-or-tabs after the first non-space-or-tab. Implied by -t .
-f , --first-only	Override -at , only coalesce initial spaces-or-tabs.

EXAMPLES

Align tab-separated data:

```
$ printf '147.312$\t12$\t12\t2.3%%\n11 520$\t320$\t30\t20%%\n' |
expand
147.312$      12$      12      2.3%
11 520$ 320$    30      20%
```

```
$ printf '147.312$\t12$\t12\t2.3%%\n11 520$\t320$\t30\t20%%\n' |
expand -t 12
147.312$      12$      12      2.3%
11 520$      320$      30      20%
```

Tabulate a simple form:

```
$ {
> echo Groceries for February:
> printf '\tBananas\t3.5kg\t$4.51\n'
> printf '\tKiwis\t2kg\t$3.19\tCall Siegfried to explain short!\n'
> printf '\tBread\t\t$20.21\n'
> } | expand -t 4,15,25,35
Groceries for February:
Bananas      3.5kg      $4.51
```

```

      Kiwis      2kg      $3.19      Call Siegfried to explain short!
      Bread      $20.21

```

SEE ALSO

wcwidth(3), locale(7)

STANDARDS

Conforms to IEEE Std 1003.1-2024 (“POSIX.1”); **unexpand** is “unclear” (*Re: unexpand/OPTIONS/-t, STDOUT (&a.) says <space>, which contradicts the <blank> used elsewhere?: <https://www.mail-archive.com/austin-group-l@opengroup.org/msg09780.html>*) on whether folding together non-space blanks is allowed — this implementation doesn’t. This appears to be compatible with FreeBSD and the illumos gate. **-i** and **--first-only** are extensions, originating from the GNU system. **-f** and non-decimal *stops* are extensions.

HISTORY

expand appeared in 1BSD as `expand(VI)`

`expand` – expand tabs to spaces in a file like the *ex* `xpand` command with a **SYNOPSIS** of

```
expand [ file ... ]
```

and a hard **8**-column tab.

It becomes fully-formed in 2BSD as `expand(UCB)`:

`expand` – expand tabs to spaces with a **SYNOPSIS** of

```
expand [ -tabstop ] [ -tab1,tab2,...,tabn ] [ file ... ]
```

allowing up to **100** decimal *tabs* interspersed between *files*.

4.1cBSD fixes non-increasing *tab* detection. Besides the legacy syntax, this as present-day.

unexpand appeared in 4BSD, sharing `expand(1)`, now:

`expand`, `unexpand` – expand tabs to spaces, or vice versa as

```
unexpand [ -a ] [ file ... ]
```

aborting each line on the first NUL, and, despite being documented as present-day:

If the **-a** option is given, then tabs are inserted whenever they would compress the resultant file by replacing two or more characters.

each tab is treated as its equivalent amount of spaces, so ‘1234567\ta’ yields ‘1234567 a’ (i.e. **unexpand** *expands* the tab).

AT&T System V Release 4 UNIX includes 4.2BSD **expand** and 4.3BSD **unexpand** in `/usr/ucb`.

X/Open Portability Guide Issue 4 (“XPG4”) defines **expand**, marking the `-tabstop` syntax OB(solescent), and inventing **-t**, as present-day. It also defines **unexpand** verbatim (based on the manual, not the implementation — this renders the originating BSD implementation nonconformant)! adding **-t**, as present-day, for internationalisation and FORTRAN. Both are part of the User Portability Utilities feature group, and for both, the input is specified to be text files, so wonky NUL handling is allowed (well, the behaviour is unspecified, since text files don’t contain NULs).

Version 3 of the Single UNIX Specification (“SUSv3”) removes the obsolete syntax from **expand**.

IEEE Std 1003.1-2008 (“POSIX.1”) moves **[un]expand** to the base spec, since its User Portability Utilities are exclusively interactive.