pv Pipe progress viewer

CONCEPTS

pv copies stdin (or files) to stdout unchanged and draws progress on stderr, so it can sit anywhere in a pipe.

producer cat, tar, dd
↓ stdout
pv counts and throttles
↓ stdout
consumer gzip, ssh, file

Without -s, pv cannot know the total: no percentage and no ETA, only a moving bar. Pass the size when you can.

Display goes to stderr, so redirecting stdout never hides it. It is suppressed if stderr is not a terminal unless you use -f.

BASICS

pv *<file>* **>** *<copy>*
Copy a file with progress bar

pv *<file>* **|** *<command>*
Feed a file to a command with progress

<command> **| pv >** *<file>*
Watch output of a command

pv < *<in>* **|** *<command>*
Same, reading from stdin

pv -o *<file>*
Write to a file instead of stdout

pv -V
Show version

DISPLAY

pv -p
Progress bar only

pv -t
Elapsed time only

pv -e
Show ETA (needs size)

pv -r
Show current rate

pv -a
Show average rate

pv -b
Show bytes transferred

DISPLAY (cont.)

pv -ptebar
Everything at once

pv -I
Show estimated finish time

pv -8
Show bits instead of bytes

pv -k
Use powers of 1000 (SI)

pv -v
Print rate statistics at the end

SIZE AND COUNTING

pv -s *<size>*
Expected total (K, M, G, T suffix)

pv -s @*<path>*
Take size from a file or directory

pv -s $(du -sb *<dir>* **| cut -f1)**
Size of a directory in bytes

pv -s $(stat -c %s *<file>***)**
Size of a file for piped input

pv -l
Count lines, not bytes

pv -S -s *<size>*
Stop after size bytes

pv -W
Wait for first byte before timing

RATE AND TRANSFER

pv -L *<rate>*
Limit throughput (bytes/s, suffixes)

pv -q -L *<rate>*
Throttle with no display

pv -q
No output

pv -E
Skip read errors, pad with NULs

NAMES AND MULTIPLE BARS

pv -N *<name>*
Prefix the bar with a name

pv -c
Cursor positioning for several bars

NAMES AND MULTIPLE BARS (cont.)

pv -cN in | gzip -d | pv -cN out
Two labelled bars in one pipe

pv -f
Force display when stderr is no tty

FORMAT AND SCRIPTING

pv -F '*<format>***'**
Custom display format

pv -n
Integer percentages on stderr

Format sequences

Sequence	Shows
%p	Progress bar
%t	Elapsed time
%e	ETA
%I	Finish time
%r	Current rate
%a	Average rate
%b	Bytes
%T	Buffer fill
%N	Name
%%	Literal percent

OTHER PROCESSES

pv -d *<pid>*
Watch all files a process has open

pv -d *<pid>*:*<fd>*
Watch one file descriptor

pv -R *<pid>* **-L** *<rate>*
Change a running pv's options

RECIPES

Archive a directory with progress

```
tar cf - <dir>/ | pv -s $(du -sb <dir>/ | cut -f1) | gzip -9 > <dir>.tar.gz
```

Extract with progress

```
pv <archive>.tar.gz | tar xzf -
```

Image a disk, skip bad sectors

```
pv -EE /dev/<disk> > <disk>.img
pv <disk>.img > /dev/<disk>
```

Throttled copy over ssh

```
pv -L 2m <file> | ssh <host> 'cat > <file>'
# watch an already running gzip
pv -d $(pidof gzip)
```