



Linux Ubuntu 26.04 Manual Pages on command 'pm-gawk.1'

\$ man pm-gawk.1

PM-GAWK(1) Utility Commands PM-GAWK(1)

NAME

persistent memory gawk - persistent data and functions

SYNOPSIS

```
truncate -s size heap.pma
export GAWK_PERSIST_FILE=heap.pma
gawk ...
truncate -s size heap.pma
GAWK_PERSIST_FILE=heap.pma gawk ...
truncate -s size heap.pma
alias pm='GAWK_PERSIST_FILE=heap.pma'
pm gawk ...                      # succinct
unset GAWK_PERSIST_FILE    # disable persistence
export GAWK_PERSIST_FILE=other_heap.pma # change heap
rm heap.pma                      # delete heap
```

DESCRIPTION

Gawk 5.2 and later supports a persistent memory feature that can store script-defined variables and functions in a file for later use. The feature, called pm-gawk, is described in GAWK: Effective AWK Programming and in Persistent Memory gawk User Manual.

pm-gawk is activated by passing to gawk the name of an initially empty (all-zero-bytes) heap file, via the environment variable GAWK_PERSIST_FILE. pm-gawk retains script-defined variables and functions in the heap file for use in subsequent gawk invocations.

pm-gawk offers at least two advantages compared with the existing rwwarray extension: it of?

fers constant-time ($O(1)$ time") access to individual elements of persistent associative arrays, and it can store script-defined functions in addition to variables.

EXAMPLES

Demonstrate persistent variables:

```
$ truncate -s 1G heap.pma      # create heap file
$ export GAWK_PERSIST_FILE=heap.pma # "ambient" env var
$ gawk 'BEGIN { print ++i }'
1
$ gawk 'BEGIN { print ++i }'
2
$ gawk 'BEGIN { print ++i }'
3
```

To pass the environment variable on per-command basis:

```
$ unset GAWK_PERSIST_FILE
$ GAWK_PERSIST_FILE=heap.pma gawk 'BEGIN { print ++i }'
4
$ GAWK_PERSIST_FILE=heap.pma gawk 'BEGIN { print ++i }'
5
$ GAWK_PERSIST_FILE=heap.pma gawk 'BEGIN { print ++i }'
6
```

To reduce visual clutter of per-command environment variable passing:

```
$ alias pm='GAWK_PERSIST_FILE=heap.pma'
$ pm gawk 'BEGIN { print ++i }'
7
$ pm gawk 'BEGIN { print ++i }'
8
```

To refrain from activating persistence:

```
$ unset GAWK_PERSIST_FILE
$ gawk 'BEGIN { print ++i }'
1
$ gawk 'BEGIN { print ++i }'
1
```

To permanently "forget" the contents of the heap file:

\$ rm heap.pma

ENVIRONMENT VARIABLES

GAWK_PERSIST_FILE contains the name of a heap file where script-defined variables and functions are stored. If this environment variable is not visible to gawk, the persistence feature is not activated and gawk behaves in its traditional manner.

VERSION INFORMATION

Persistent memory gawk was first released in gawk 5.2.

AUTHORS

Arnold Robbins, the maintainer of gawk, implemented pm-gawk using a persistent memory allocator (pma) provided by Terence Kelly. An earlier proof-of-concept prototype of persistent gawk was developed by Haris Volos, Zi Fan Tan, and Jianan Li using a fork of the official gawk sources.

CAVEATS

The GNU/Linux CIFS filesystem is known to cause problems for the persistent memory allocator. Do not use a backing file on such a filesystem with pm-gawk.

BUG REPORTS

Follow the procedures in GAWK: Effective AWK Programming and in Persistent Memory gawk User Manual. For suspected bugs related to persistence (as opposed to other non-persistence-related gawk bugs) please also send e-mail to Terence Kelly at one or more of these addresses: tpkelly@acm.org, tpkelly@eecs.umich.edu, or tpkelly@cs.princeton.edu.

SEE ALSO

`gawk(1)`, GAWK: Effective AWK Programming, and Persistent Memory gawk User Manual. The two manuals should be available in the Info subsystem if Info installed on your system.

See <https://web.eecs.umich.edu/~tpkelly/pma/> for the latest source code and manual.

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