AWK Vs NAWK Vs GAWK

by RAMESH NATARAJAN *on* JUNE 29, 2011

Awk is a powerful language to manipulate and process text files. It is especially helpful when the lines in a text files are in a record format. i.e A record containing multiple fields separated by a delimiter. Even when the input file is not in a record format, you can still use awk to do some basic file and data processing. You can also write programming logic using awk even when there are no input files that needs to be processed.

In short, AWK is a powerful language, that can come in handy to do daily routine jobs.

If you are new to awk, start by reading this Awk introduction tutorial that is part of the Awk tutorial series.

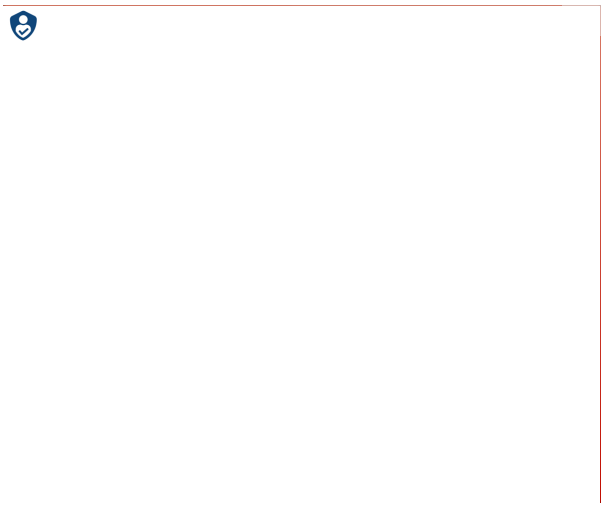
Learning curve on AWK is much smaller than the learning curve on any other languages. If you know C program already, you'll appreciate how simple and easy it is to learn AWK.

1. Awk

AWK is original AWK written by A. Aho, B. W. Kernighan and P. Weinberger.

2. Nawk

NAWK stands for “New AWK”. This is AT&T’s version of the Awk.



3. Gawk

GAWK stands for “GNU AWK”. All Linux distributions comes with GAWK. This is fully compatible with AWK and NAWK.

On Linux, typing either awk or gawk invokes the GAWK. awk is linked to gawk as shown below on Linux systems.

```
# ls -l /bin/awk /usr/bin/awk
lrwxrwxrwx 1 root root  4 Jan  5 23:13 /bin/awk -> gawk
lrwxrwxrwx 1 root root 14 Jan  5 23:13 /usr/bin/awk -> ../../bin/gawk
```

The following table summarizes the different features that are available in these versions. As you see below, gawk is the superset that contains all the features of original awk and nawk.

The following basic built-in variables FS, OFS, RS, ORS, NR, NF, and FILENAME are available in all versions of awk.

Feature	Description	AWK	NAWK	GAWK
FS	Input field separator	Yes	Yes	Yes
OFS	Output field separator	Yes	Yes	Yes
RS	Record separator	Yes	Yes	Yes
ORS	Output record separator	Yes	Yes	Yes
NR	Number of the record	Yes	Yes	Yes
NF	Number of fields in a record	Yes	Yes	Yes
FILENAME	Contains current input-file that is getting processed	Yes	Yes	Yes

All the following features are not available in the original awk. They are available in nawk and/or gawk as shown below.

Feature	Description	NAWK	GAWK
FNR	File “Number of the record”	Yes	Yes
ARGC	Total number or arguments passed to awk script	Yes	Yes
ARGV	Array containing all awk script arguments	Yes	Yes
ARGIND	Index to ARGV to retrieve the current file name		Yes
SUBSEP	Subscript separator for array indexes	Yes	Yes
RSTART	Match function sets RSTART with the starting location of str1 in str2	Yes	Yes
RLENGTH	Match function sets RLENGTH with length of the str1	Yes	Yes
OFMT	Awk uses this to decide how to print values. Default is “%.6g”	Yes	Yes

	comparisons.		
ERRNO	Contains error message of an I/O operation. e.g. while using getline function.		Yes
BINMODE n	Set binary mode for I/O. n can be 1 (input files), 2(output files), or 3(all files)		Yes
CONVFMT	The format used while converting number to string.		Yes
FIELDWIDTHS n	n is a space delimited number that indicates the column widths. If this is available, gawk uses this instead of FS.		Yes
LINT n	n can be a number. When n is a nonzero number (indicating true), gawk will displays fatal, invalid, or warning lint messages (same as –lint command line)		Yes
TEXTDOMAIN	This is used for internationalization.		Yes
sub(str1,str2,var)	In the input string (var), str1 is replaced with str2, and output is stored back in var	Yes	Yes
gsub(str1,str2,var)	Same as sub, but global. It does multiple substitutions on the same input string (var).	Yes	Yes
match(str1,str2)	Returns positive number when str1 is present in str2.	Yes	Yes
getline < file	Read next line from another input-file. Sets $0, NF	Yes	Yes
getline var < file	Read next line from another input-file and store it in variable (var)	Yes	Yes
toupper(str)	Converts str to upper-case		Yes
tolower(str)	Converts str to lower-case		Yes

	strftime("%c",systime())		

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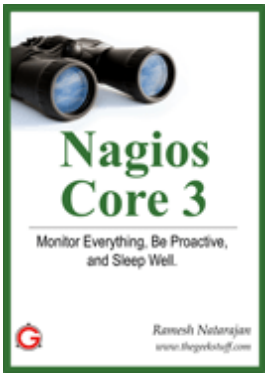

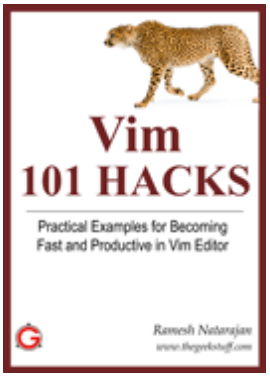

Tagged as: Awk Cheatsheet, Gawk Cheatsheet, Nawk Cheatsheet

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Kerry Hoath June 29, 2011, 3:56 am

No mention is made of mawk in your article. it is smaller and fastger than gawk but has limits on nf and sprintf buffer size.