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Red Hat Enterprise Linux Release 9.2 Manual Pages on 'grep.1p' command

$ man grep.1p

GREP(1P) POSIX Programmer's Manual GREP(1P)

PROLOG

This manual page is part of the POSIX Programmer's Manual. The Linux implementation of this interface may differ (consult the corresponding Linux manual page for details of Linux behavior), or the interface may not be implemented on Linux.

NAME

grep ? search a file for a pattern

SYNOPSIS

grep [-E|-F] [-c|-l|-q] [-insvx] -e pattern_list [-e pattern_list]... [-f pattern_file]... [file...]

grep [-E|-F] [-c|-l|-q] [-insvx] [-e pattern_list]... -f pattern_file [-f pattern_file]... [file...]

grep [-E|-F] [-c|-l|-q] [-insvx] pattern_list [file...]

DESCRIPTION

The grep utility shall search the input files, selecting lines matching one or more patterns; the types of patterns are controlled by the op? tions specified. The patterns are specified by the -e option, -f op? tion, or the pattern_list operand. The pattern_list's value shall con? sist of one or more patterns separated by <newline> characters; the pattern_file's contents shall consist of one or more patterns termi? nated by a <newline> character. By default, an input line shall be se? lected if any pattern, treated as an entire basic regular expression

(BRE) as described in the Base Definitions volume of POSIX.1?2017, Sec?
tion 9.3, Basic Regular Expressions, matches any part of the line ex?
cluding the terminating <newline>; a null BRE shall match every line.
By default, each selected input line shall be written to the standard
output.

Regular expression matching shall be based on text lines. Since a <new?
line> separates or terminates patterns (see the -e and -f options be?
low), regular expressions cannot contain a <newline>. Similarly, since
patterns are matched against individual lines (excluding the terminat?
ing <newline> characters) of the input, there is no way for a pattern
to match a <newline> found in the input.

OPTIONS

The grep utility shall conform to the Base Definitions volume of
POSIX.1?2017, Section 12.2, Utility Syntax Guidelines.

The following options shall be supported:

-E Match using extended regular expressions. Treat each pattern
specified as an ERE, as described in the Base Definitions
volume of POSIX.1?2017, Section 9.4, Extended Regular Expres?
sions. If any entire ERE pattern matches some part of an in?
put line excluding the terminating <newline>, the line shall
be matched. A null ERE shall match every line.

-F Match using fixed strings. Treat each pattern specified as a
string instead of a regular expression. If an input line con?
tains any of the patterns as a contiguous sequence of bytes,
the line shall be matched. A null string shall match every
line.

-c Write only a count of selected lines to standard output.

-e pattern_list

Specify one or more patterns to be used during the search for
input. The application shall ensure that patterns in pat?
tern_list are separated by a <newline>. A null pattern can
be specified by two adjacent <newline> characters in pat?
tern_list. Unless the -E or -F option is also specified,

each pattern shall be treated as a BRE, as described in the Base Definitions volume of POSIX.1?2017, Section 9.3, Basic Regular Expressions. Multiple -e and -f options shall be ac? cepted by the grep utility. All of the specified patterns shall be used when matching lines, but the order of evalua? tion is unspecified.

-f pattern_file

Read one or more patterns from the file named by the pathname pattern_file. Patterns in pattern_file shall be terminated by a <newline>. A null pattern can be specified by an empty line in pattern_file. Unless the -E or -F option is also specified, each pattern shall be treated as a BRE, as de? scribed in the Base Definitions volume of POSIX.1?2017, Sec? tion 9.3, Basic Regular Expressions.

-i Perform pattern matching in searches without regard to case; see the Base Definitions volume of POSIX.1?2017, Section 9.2, Regular Expression General Requirements.

-l (The letter ell.) Write only the names of files containing selected lines to standard output. Pathnames shall be written once per file searched. If the standard input is searched, a pathname of "(standardinput)" shall be written, in the POSIX locale. In other locales, "standardinput" may be replaced by something more appropriate in those locales.

-n Precede each output line by its relative line number in the file, each file starting at line 1. The line number counter shall be reset for each file processed.

-q Quiet. Nothing shall be written to the standard output, re? gardless of matching lines. Exit with zero status if an input line is selected.

-s Suppress the error messages ordinarily written for nonexis? tent or unreadable files. Other error messages shall not be suppressed.

-v Select lines not matching any of the specified patterns. If

the -v option is not specified, selected lines shall be those that match any of the specified patterns.

-x Consider only input lines that use all characters in the line excluding the terminating <newline> to match an entire fixed string or regular expression to be matching lines.

OPERANDS

The following operands shall be supported:

pattern_list

Specify one or more patterns to be used during the search for input. This operand shall be treated as if it were specified as -e pattern_list.

file A pathname of a file to be searched for the patterns. If no file operands are specified, the standard input shall be used.

STDIN

The standard input shall be used if no file operands are specified, and shall be used if a file operand is '-' and the implementation treats the '-' as meaning standard input. Otherwise, the standard input shall not be used. See the INPUT FILES section.

INPUT FILES

The input files shall be text files.

ENVIRONMENT VARIABLES

The following environment variables shall affect the execution of grep:

LANG Provide a default value for the internationalization vari? ables that are unset or null. (See the Base Definitions vol? ume of POSIX.1?2017, Section 8.2, Internationalization Vari? ables for the precedence of internationalization variables used to determine the values of locale categories.)

LC_ALL If set to a non-empty string value, override the values of all the other internationalization variables.

LC_COLLATE

Determine the locale for the behavior of ranges, equivalence classes, and multi-character collating elements within regu?

lar expressions.

LC_CTYPE Determine the locale for the interpretation of sequences of bytes of text data as characters (for example, single-byte as opposed to multi-byte characters in arguments and input files) and the behavior of character classes within regular expressions.

LC_MESSAGES

Determine the locale that should be used to affect the format and contents of diagnostic messages written to standard er? ror.

NLSPATH Determine the location of message catalogs for the processing of LC_MESSAGES.

ASYNCHRONOUS EVENTS

Default.

STDOUT

If the -l option is in effect, the following shall be written for each file containing at least one selected input line:

"%s\n", <file>

Otherwise, if more than one file argument appears, and -q is not speci? fied, the grep utility shall prefix each output line by:

"%s:", <file>

The remainder of each output line shall depend on the other options specified:

* If the -c option is in effect, the remainder of each output line shall contain:

  "%d\n", <count>

* Otherwise, if -c is not in effect and the -n option is in effect, the following shall be written to standard output:

  "%d:", <line number>

* Finally, the following shall be written to standard output:

  "%s", <selected-line contents>

STDERR

The standard error shall be used only for diagnostic messages.

OUTPUT FILES

None.

EXTENDED DESCRIPTION

None.

EXIT STATUS

The following exit values shall be returned:

0 One or more lines were selected.

1 No lines were selected.

>1 An error occurred.

CONSEQUENCES OF ERRORS

If the -q option is specified, the exit status shall be zero if an in? put line is selected, even if an error was detected. Otherwise, default actions shall be performed.

The following sections are informative.

APPLICATION USAGE

Care should be taken when using characters in pattern_list that may also be meaningful to the command interpreter. It is safest to enclose the entire pattern_list argument in single-quotes:

'...'

The -e pattern_list option has the same effect as the pattern_list op? erand, but is useful when pattern_list begins with the <hyphen-minus> delimiter. It is also useful when it is more convenient to provide mul? tiple patterns as separate arguments.

Multiple -e and -f options are accepted and grep uses all of the pat? terns it is given while matching input text lines. (Note that the or? der of evaluation is not specified. If an implementation finds a null string as a pattern, it is allowed to use that pattern first, matching every line, and effectively ignore any other patterns.)

The -q option provides a means of easily determining whether or not a pattern (or string) exists in a group of files. When searching several files, it provides a performance improvement (because it can quit as soon as it finds the first match) and requires less care by the user in choosing the set of files to supply as arguments (because it exits zero

if it finds a match even if grep detected an access or read error on earlier file operands).

When using grep to process pathnames, it is recommended that LC_ALL, or at least LC_CTYPE and LC_COLLATE, are set to POSIX or C in the environ? ment, since pathnames can contain byte sequences that do not form valid characters in some locales, in which case the utility's behavior would be undefined. In the POSIX locale each byte is a valid single-byte character, and therefore this problem is avoided.

EXAMPLES

1. To find all uses of the word "Posix" (in any case) in file text.mm and write with line numbers:

   grep -i -n posix text.mm

2. To find all empty lines in the standard input:

   grep ^$

   or:

   grep -v .

3. Both of the following commands print all lines containing strings "abc" or "def" or both:

   grep -E 'abc|def'

   grep -F 'abc
   def'

4. Both of the following commands print all lines matching exactly "abc" or "def":

   grep -E '^abc$|^def$'

   grep -F -x 'abc
   def'

RATIONALE

This grep has been enhanced in an upwards-compatible way to provide the exact functionality of the historical egrep and fgrep commands as well.

It was the clear intention of the standard developers to consolidate the three greps into a single command.

The old egrep and fgrep commands are likely to be supported for many years to come as implementation extensions, allowing historical appli?

cations to operate unmodified.

Historical implementations usually silently ignored all but one of mul? tiply-specified -e and -f options, but were not consistent as to which specification was actually used.

The -b option was omitted from the OPTIONS section because block num? bers are implementation-defined.

The System V restriction on using - to mean standard input was omitted.

A definition of action taken when given a null BRE or ERE is specified.

This is an error condition in some historical implementations.

The -l option previously indicated that its use was undefined when no files were explicitly named. This behavior was historical and placed an unnecessary restriction on future implementations. It has been removed.

The historical BSD grep -s option practice is easily duplicated by redirecting standard output to /dev/null. The -s option required here is from System V.

The -x option, historically available only with fgrep, is available here for all of the non-obsolescent versions.

FUTURE DIRECTIONS

None.

SEE ALSO

sed

The Base Definitions volume of POSIX.1?2017, Chapter 8, Environment Variables, Chapter 9, Regular Expressions, Section 12.2, Utility Syntax Guidelines

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