SED command in Linux | Set 2

Difficulty Level : Medium ● Last Updated : 23 Dec, 2021

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We have discussed some of the SED command options in Sed Command in Linux/Unix with examples

SED is used for finding, filtering, text substitution, replacement and text manipulations like insertion, deletion search, etc. It's a one of the powerful utilities offered by Linux/Unix systems. We can use sed with regular expressions. I hope atleast you have the basic knowledge about Linux regular expressions.

It provides Non-interactive editing of text files that's why it's used to automate editing and has two buffers – **pattern buffer** and **hold buffer**. *Sed* use *Pattern buffer* when it read files, line by line and that currently read line is inserted into pattern buffer whereas *hold buffer* is a long-term storage, it catch the information, store it and reuse it when it is needed. Initially, both are empty. SED command is used for performing different operations without even opening the file.

sed general syntax –
sed OPTIONS... [SCRIPT] [INPUTFILE...]

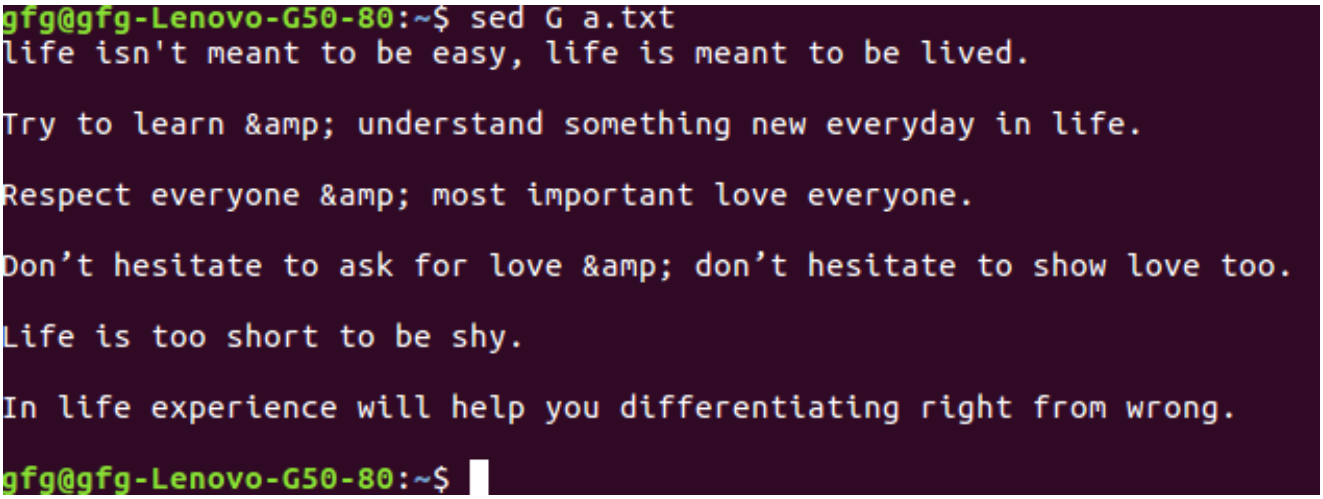
write the output of each sed command. So, you may refer the same file to practice all the commands initially.

```
[root@rhel7 ~]# cat a.txt
life isn't meant to be easy, life is meant to be lived.
Try to learn & understand something new everyday in life.
Respect everyone & most important love everyone.
Don’t hesitate to ask for love & don’t hesitate to show love too.
Life is too short to be shy.
In life, experience will help you differentiating right from
wrong.
```

 # Let’s start with File Spacing

1 – Insert one blank line after each line –

```
[root@rhel7 ~]# sed G a.txt
```



2 – To insert two blank lines –

```
[root@rhel7 ~]# sed 'G;G' a.txt
```

3 – Delete blank lines and insert one blank line after each line –

```
[root@rhel7 ~]# sed '/^$/d;G' a.txt
```

```
[root@rhel7 ~]# sed '/love/{x;p;x;}' a.txt
```

5 – Insert a blank line below every line which matches "love" –

```
[root@rhel7 ~]# sed '/love/G' a.txt
```

6 – Insert 5 spaces to the left of every lines –

```
[root@rhel7 ~]# sed 's/^/     /' a.txt
```

 # Numbering lines

1 – Number each line of a file (left alignment). **=** is used to number the line. \t is used for tab between number and sentence –

```
[root@rhel7 ~]# sed =  a.txt | sed 'N;s/\n/\t/'
```

2 – Number each line of a file (number on left, right-aligned). This command is similar to `cat -n filename`.

```
[root@rhel7 ~]# sed = a.txt | sed 'N; s/^/     /; s/ *\(.\
{4,\}\)\n/\1  /'
```

3 – Number each line of file, only if line is not blank –

```
[root@rhel7 ~]#  sed '/./=' a.txt | sed '/./N; s/\n/ /'
```

 # Deleting lines

1 – Delete a particular line –

Syntax: sed 'nd' filename

Example :

```
[root@rhel7 ~]# sed '5d' a.txt
```

2 – Delete the last line

Syntax: sed '$d' filename

3 – Delete line from range x to y

```
[root@rhel7 ~]# sed '3,5d' a.txt
```

4 – Delete from nth to last line
Syntax: sed 'nth,$d' filename
Example :

```
[root@rhel7 ~]# sed '2,$d' a.txt
```

5 – Delete the pattern matching line –
Syntax: sed '/pattern/d' filename
Example :

```
[root@rhel7 ~]# sed '/life/d' a.txt
```

6 – Delete lines starting from nth line and every 2nd line from there –
Syntax: sed 'n~2d' filename
Example :

```
[root@rhel7 ~]# sed '3~2d' a.txt
```

7 – Delete the lines which matches the pattern and 2 lines after to that –
Syntax: sed '/pattern/,+2d' filename
Example :

```
[root@rhel7 ~]# sed '/easy/,+2d' a.txt
```

8 – Delete blank Lines

```
[root@rhel7 ~]# sed '/^$/d' a.txt
```

9 – Delete empty lines or those begins with "#" –

```
[root@rhel7 ~]# sed -i '/^#/d;/^$/d' a.txt
```

 # View/Print the files

If we want to view content of file, then we use **cat** command and if we want to view the

1 – Viewing a file from x to y range –

Syntax: sed -n 'x,yp' filename

Example :

```
[root@rhel7 ~]# sed -n '2,5p' a.txt
```

2 – View the entire file except the given range –

Syntax: sed 'x,yd' filename

Example :

```
[root@rhel7 ~]# sed '2,4d' a.txt
```

3 – Print nth line of the file –

Syntax: sed -n 'address'p filename

Example :

```
[root@rhel7 ~]# sed -n '4'p a.txt
```

4 – Print lines from xth line to yth line.

Syntax: sed -n 'x,y'p filename

Example :

```
[root@rhel7 ~]# sed -n '4,6'p a.txt
```

5 – Print only the last line –

Syntax: sed -n '$'p filename

6 – Print from nth line to end of file –

Syntax: sed -n 'n,$p' filename

Example :

```
[root@rhel7 ~]# sed -n '3,$'p a.txt
```

Pattern Printing

7 – Print the line only which matches the pattern –

Syntax: sed -n /pattern/p filename

Example :

8 – Print lines which matches the pattern i.e from input to xth line.
Syntax: sed -n '/pattern/,xp' filename
Example :

```
[root@rhel7 ~]# sed -n '/everyone/,5p' a.txt
```

Following prints lines which matches the pattern, 3rd line matches the pattern "everyone", so it prints from 3rd line to 5th line. Use **$** in place of 5, if want to print the file till end.

9 – Prints lines from the xth line of the input, up-to the line which matches the pattern. If the pattern doesn't found then it prints up-to end of the file.
Syntax: sed -n 'x,/pattern/p' filename
Example :

```
sed -n '1,/everyone/p' a.txt
```

10 – Print the lines which matches the pattern up-to the next xth lines –
Syntax: sed -n '/pattern/,+xp' filename
Example :

```
sed -n '/learn/,+2p' a.txt
```

 # Replacement with the sed command
1 – Change the first occurrence of the pattern –

```
[root@rhel7 ~]# sed 's/life/leaves/' a.txt
```

2 – Replacing the nth occurrence of a pattern in a line –
Syntax: sed 's/old_pattern/new_pattern/n' filename
Example :

```
[root@rhel7 ~]# sed 's/to/two/2' a.txt
```

We wrote "2" because we replaces the second occurrence. Likewise you can use 3, 4 etc according to need.

4 – Replace pattern from nth occurrence to all occurrences in a line.
Syntax: sed 's/old_pattern/new_pattern/ng' filename
Example :

```
[root@rhel7 ~]# sed 's/to/TWO/2g' a.txt
```

Note – This sed command replaces the second, third, etc occurrences of pattern "to" with "TWO" in a line.

If you wish to print only the replaced lines, then use "-n" option along with "/p" print flag to display only the replaced lines –

```
[root@rhel7 ~]# sed -n 's/to/TWO/p' a.txt
```

And if you wish to print the replaced lines twice, then only use "/p" print flag without "-n" option-

```
[root@rhel7 ~]# sed 's/to/TWO/p' a.txt
```

5 – Replacing pattern on a specific line number. Here, "m" is the line number.
Syntax: sed 'm s/old_pattern/new_pattern/' filename
Example :

```
[root@rhel7 ~]# sed '3 s/every/each/' a.txt
```

If you wish to print only the replaced lines –

```
[root@rhel7 ~]# sed -n '3 s/every/each/p' a.txt
```

6 – Replace string on a defined range of lines –
Syntax: sed 'x,y s/old_pattern/new_pattern/' filename
where,
x = starting line number
and y = ending line number

Example :

Example :

```
[root@rhel7 ~]# sed '2,$ s/to/TWO/' a.txt
```


7 – If you wish to replace pattern in order to ignore character case (beginning with uppercase or lowercase), then there are two ways to replace such patterns –
First, By using "/i" print flag –
Syntax: sed 's/old_pattern/new_pattern/i' filename
Example :

```
[root@rhel7 ~]# sed 's/life/Love/i' a.txt
```

Second, By using regular expressions –

```
[root@rhel7 ~]# sed 's/[Ll]ife/Love/g' a.txt
```

8 – To replace multiple spaces with a single space –

```
[root@rhel7 clang]# sed 's/  */ /g' filename
```

9 – Replace one pattern followed by the another pattern –
Syntax: sed '/followed_pattern/ s/old_pattern/new_pattern/' filename
Example :

```
[root@rhel7 ~]# sed '/is/ s/live/love/' a.txt
```

10 – Replace a pattern with other except in the nth line.
Syntax: sed 'n!s/old_pattern/new_pattern/' filename
Example :

```
[root@rhel7 ~]# sed -i '5!s/life/love/' a.txt
```

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