In this article let us review how to append, insert, replace a line in a file and how to get line numbers of a file.

Let us first create testfile.txt file that will be used in all the examples mentioned below.

```
$cat testfile.txt

Linux Sysadmin

Databases - Oracle, mySQL etc.

Security (Firewall, Network, Online Security etc)

Storage in Linux

Productivity (Too many technologies to explore, not much time available)

Windows- Sysadmin, reboot etc.
```

Append Lines Using Sed Command

Sed provides the command "a" which appends a line after every line with the address or pattern.

```
Syntax:



#sed 'ADDRESS a\

        Line which you want to append' filename



#sed '/PATTERN/ a\
```

```
        Line which you want to append' filename
```

Sed Append Example 1. Add a line after the 3rd line of the file.

Add the line "Cool gadgets and websites" after the 3rd line. sed "a" command inserts the line after match.

```
$ sed '3 a\
> Cool gadgets and websites' testfile.txt

Linux Sysadmin
Databases - Oracle, mySQL etc.
Security (Firewall, Network, Online Security etc)
Cool gadgets and websites
Storage in Linux
Productivity (Too many technologies to explore, not much time available)
Windows- Sysadmin, reboot etc.
```

Sed Append Example 2. Append a line after every line matching the pattern

The below sed command will add the line "Linux Scripting" after every line that matches the pattern "Sysadmin".

```
$ sed '/Sysadmin/a \
> Linux Scripting' testfile.txt

Linux Sysadmin
Linux Scripting
Databases - Oracle, mySQL etc.
Security (Firewall, Network, Online Security etc)
Storage in Linux
Productivity (Too many technologies to explore, not much time available)
Windows- Sysadmin, reboot etc.
Linux Scripting
```

Sed Append Example 3. Append a line at the end of the file

The following example, appends the line "Website Design" at the end of the file.

```
$ sed '$ a\
> Website Design' testfile.txt

Linux Sysadmin
Databases - Oracle, mySQL etc.
Security (Firewall, Network, Online Security etc)
Storage in Linux
```

```
Productivity (Too many technologies to explore, not much time available)
Windows- Sysadmin, reboot etc.
Website Design
```

Insert Lines Using Sed Command

Sed command "i" is used to insert a line before every line with the range or pattern.

```
Syntax:



#sed 'ADDRESS i\

        Line which you want to insert' filename



#sed '/PATTERN/ i\

        Line which you want to insert' filename
```

Sed Insert Example 1. Add a line before the 4th line of the line.

Add a line "Cool gadgets and websites" before 4th line. "a" command inserts the line after match whereas "i" inserts before match.

```
$ sed '4 i\
> Cool gadgets and websites' testfile.txt

Linux Sysadmin
Databases - Oracle, mySQL etc.
Security (Firewall, Network, Online Security etc)
Cool gadgets and websites
Storage in Linux
Productivity (Too many technologies to explore, not much time available)
Windows- Sysadmin, reboot etc.
```

Sed Insert Example 2. Insert a line before every line with the pattern

The below sed command will add a line "Linux Scripting" before every line that matches with the pattern called 'Sysadmin'.

```
$ sed '/Sysadmin/i \
> Linux Scripting' testfile.txt

Linux Scripting
Linux Sysadmin
Databases - Oracle, mySQL etc.
Security (Firewall, Network, Online Security etc)
Storage in Linux
Productivity (Too many technologies to explore, not much time available)
Linux Scripting
Windows- Sysadmin, reboot etc.
```

Sed Insert Example 3. Insert a line before the last line of the file.

Append a line "Website Design" before the last line of the file.

```
$ sed '$ i\
> Website Design' testfile.txt

Linux Sysadmin
Databases - Oracle, mySQL etc.
Security (Firewall, Network, Online Security etc)
Storage in Linux
Productivity (Too many technologies to explore, not much time available)
Website Design
Windows- Sysadmin, reboot etc.
```

Replace Lines Using Sed Command

"c" command in sed is used to replace every line matches with the pattern or ranges with the new given line.

```
Syntax:



#sed 'ADDRESS c\

       new line' filename



#sed '/PATTERN/ c\

       new line' filename
```

Sed Replace Example 1. Replace a first line of the file

The below command replaces the first line of the file with the "The Geek Stuff".

```
$ sed '1 c\
> The Geek Stuff' testfile.txt

The Geek Stuff
Databases - Oracle, mySQL etc.
Security (Firewall, Network, Online Security etc)
Storage in Linux
Productivity (Too many technologies to explore, not much time available)
Windows- Sysadmin, reboot etc.
```

Sed Replace Example 2. Replace a line which matches the pattern

Replace everyline which has a pattern "Linux Sysadmin" to "Linux Sysadmin – Scripting".

```
$ sed '/Linux Sysadmin/c \
> Linux Sysadmin - Scripting' testfile.txt

Linux Sysadmin - Scripting
Databases - Oracle, mySQL etc.
Security (Firewall, Network, Online Security etc)
Storage in Linux
Productivity (Too many technologies to explore, not much time available)
Windows- Sysadmin, reboot etc.
```

Sed Replace Example 3. Replace the last line of the file

Sed command given below replaces the last line of the file with "Last Line of the file".

```
$ sed '$ c\
> Last line of the file' testfile.txt

Linux Sysadmin
Databases - Oracle, mySQL etc.
Security (Firewall, Network, Online Security etc)
Storage in Linux
Productivity (Too many technologies to explore, not much time available)
Last line of the file
```

Print Line Numbers Using Sed Command

"=" is a command in sed to print the current line number to the standard output.

```
Syntax:



#sed '=' filename
```

The above send command syntax prints line number in the first line and the original line from the file in the next line .

sed '=' command accepts only one address, so if you want to print line number for a range of lines, you must use the curly braces.

```
Syntax:



# sed -n '/PATTERN/,/PATTERN/ {

=

p

}' filename
```

Sed Line Number Example 1. Find the line number which contains the pattern

The below sed command prints the line number for which matches with the pattern "Databases"

```
$ sed -n '/Databases/=' testfile.txt

2
```

Sed Line Number Example 2. Printing Range of line numbers

Print the line numbers for the lines matches from the pattern "Oracle" to "Productivity".

```
$ sed -n '/Oracle/,/Productivity/{
> =
```

```
> p
> }' testfile.txt

2
Databases - Oracle, mySQL etc.
3
Security (Firewall, Network, Online Security etc)
4
Storage in Linux
5
Productivity (Too many technologies to explore, not much time available)
```

Sed Line Number Example 3. Print the total number of lines in a file

Line number of the last line of the file will be the total lines in a file. Pattern $ specifies the last line of the file.

```
$ sed -n '$=' testfile.txt

6
```