grep command in Unix/Linux

The grep command in Unix/Linux is a powerful tool used for searching and manipulating text patterns within files. Its name is derived from the ed (editor) command g/re/p (globally search for a regular expression and print matching lines), which reflects its core functionality. grep is widely used by programmers, system administrators, and users alike for its efficiency and versatility in handling text data. In this article, we will explore the various aspects of the grep command.

Table of Content

Syntax of grep Command in Unix/Linux

The basic syntax of the `grep` command is as follows:

Here,

[**options**]: These are command-line flags that modify the behavior of `grep`.

[**pattern**]: This is the regular expression you want to search for.

[**file**]: This is the name of the file(s) you want to search within. You can specify multiple files for simultaneous searching.

Options Available in grep Command

Options	Description
-c	This prints only a count of the lines that match a pattern
-h	Display the matched lines, but do not display the filenames.
–i	Ignores, case for matching
-l	Displays list of a filenames only.
-n	Display the matched lines and their line numbers.
-v	This prints out all the lines that do not matches the pattern

Options	Description
-e exp	Specifies expression with this option. Can use multiple times.
-f file	Takes patterns from file, one per line.
-E	Treats pattern as an extended regular expression (ERE)
-w	Match whole word
-o	Print only the matched parts of a matching line, with each such part on a separate output line.
-A n	Prints searched line and nlines after the result.
-B n	Prints searched line and n line before the result.
-C n	Prints searched line and n lines after before the result.

Sample Commands

Consider the below file as an input.

```
cat > geekfile.txt
```

unix is great os. unix was developed in Bell labs.

learn operating system.

Unix linux which one you choose.

uNix is easy to learn.unix is a multiuser os.Learn unix .unix is a powerful.

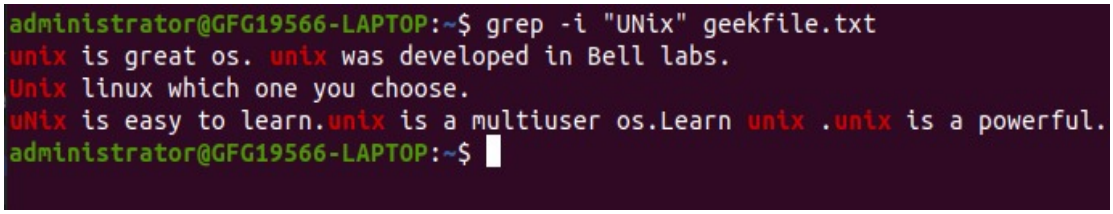
Pratical Example of grep Command in Linux

1. Case insensitive search

The -i option enables to search for a string case insensitively in the given file. It matches the words like “UNIX”, “Unix”, “unix”.

```
grep -i "UNix" geekfile.txt
```

Output:



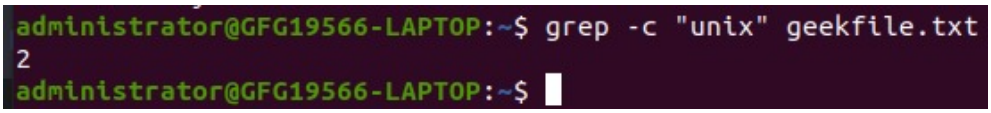
Case insensitive search

2. Displaying the Count of Number of Matches Using grep

We can find the number of lines that matches the given string/pattern

```
grep -c "unix" geekfile.txt
```

Output:



Displaying the count number of the matches

3. Display the File Names that Matches the Pattern Using grep

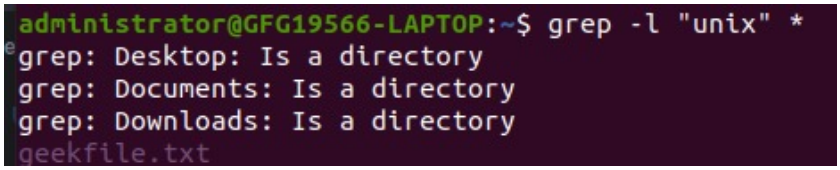
We can just display the files that contains the given string/pattern.

```
grep -l "unix" *
```

or

```
grep -l "unix" f1.txt f2.txt f3.xt f4.txt
```

Output:



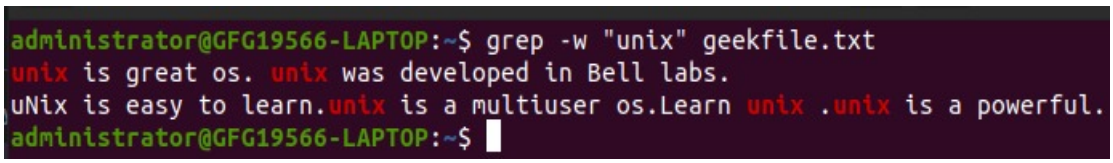
The file name that matches the pattern

4. Checking for the Whole Words in a File Using grep

By default, grep matches the given string/pattern even if it is found as a substring in a file. The -w option to grep makes it match only the whole words.

```
grep -w "unix" geekfile.txt
```

Output:



checking whole words in a file

5. Displaying only the matched pattern Using grep

By default, grep displays the entire line which has the matched string. We can make the grep to display only the matched string by using the -o option.

```
grep -o "unix" geekfile.txt
```

Output:

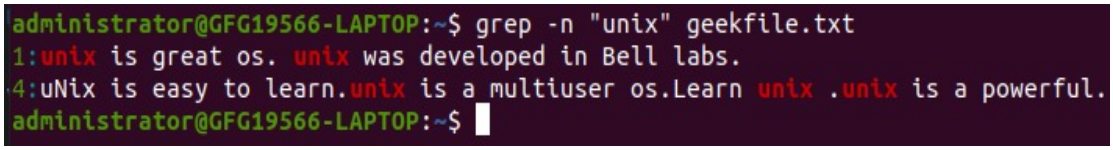
Displaying only the matched pattern

6. Show Line Number While Displaying the Output Using grep -n

To show the line number of file with the line matched.

```
grep -n "unix" geekfile.txt
```

Output:



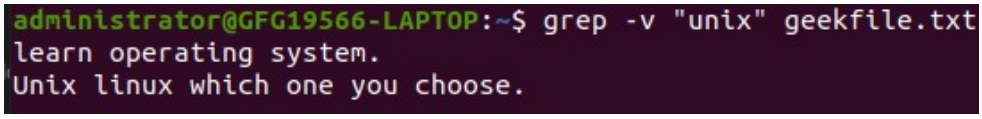
Show line number while displaying the output

7. Inverting the Pattern Match Using grep

You can display the lines that are not matched with the specified search string pattern using the -v option.

```
grep -v "unix" geekfile.txt
```

Output:



Inverting the pattern match

8. Matching the Lines that Start with a String Using grep

The ^ regular expression pattern specifies the start of a line. This can be used in grep to match the lines which start with the given string or pattern.

```
grep "^unix" geekfile.txt
```

Output:

Matching the lines that start with a string

9. Matching the Lines that End with a String Using grep

The $ regular expression pattern specifies the end of a line. This can be used in grep to match the lines which end with the given string or pattern.

```
grep "os$" geekfile.txt
```

10.Specifies expression with -e option

Can use multiple times :

```
grep –e "Agarwal" –e "Aggarwal" –e "Agrawal" geekfile.txt
```

11. -f file option Takes patterns from file, one per line

```
cat pattern.txt
```

```
Agarwal
Aggarwal
Agrawal
```

```
grep –f pattern.txt  geekfile.txt
```

12. Print n Specific Lines from a File Using grep

-A prints the searched line and n lines after the result, -B prints the searched line and n lines before the result, and -C prints the searched line and n lines after and before the result.

Syntax:

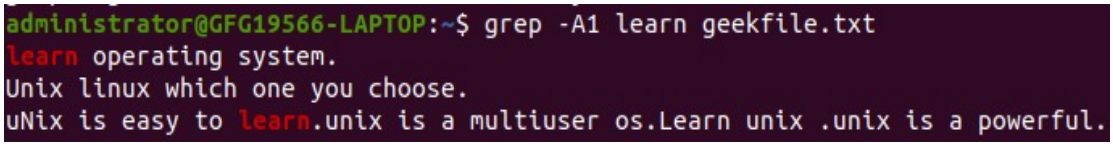
```
grep -A[NumberOfLines(n)] [search] [file]

grep -B[NumberOfLines(n)] [search] [file]
```

```
grep -C[NumberOfLines(n)] [search] [file]
```

Example:

```
grep -A1 learn geekfile.txt
```

Output:



Print n specific lines from a file

13. Search Recursively for a Pattern in the Directory

-R prints the searched pattern in the given directory recursively in all the files.

Syntax:

```
grep -R [Search] [directory]
```

Example :

```
grep -iR geeks /home/geeks
```

Output:

```
./geeks2.txt:Well Hello Geeks
./geeks1.txt:I am a big time geek
---------------------------------
-i to search for a string case insensitively
-R to recursively check all the files in the directory.
```

Conclusion

In this article we discussed the `grep` command in Linux which is a powerful text-search tool that uses regular expressions to find patterns or text within files. It offers various options like case insensitivity, counting matches, and listing file names. With the ability to search recursively, use regular expression flags, and customize output, `grep` is a vital tool for Linux users to efficiently handle text-related tasks. Mastering `grep` enhances your ability to work with text data in the Linux environment.

Last Updated : 15 Feb, 2024

Previous
How to View the Content of File in Linux | cat Command

Next
How to Find a File in Linux | Find Command

Similar Reads

Difference between grep and fgrep command

Shell Script to Display the Exit Status Using Grep Command

Extract Emails From a Text File Using Grep Command in Linux

Run a Command Conditionally with netcat and grep

How to Recursively Grep all Directories and Subdirectories in Linux

How to suppress binary file matching results in grep

How To Show Only Filenames with grep on Linux

Regular Expression in grep

Shell Script for grep with context display and highlighted pattern matches

Ccat – Colorize Cat Command Output command in Linux with Examples

GeeksforGeeks

Article Tags : linux-command , Linux-misc-commands , Linux-Unix

Additional Information

Trending in News

View More

- Google Introduces "Genie AI": AI Platform That Lets You Create Video Games
- IBM and Samsung SDS Transform Enterprise Mobility with Zero-Touch Technology
- Tech Layoffs Continue as Cisco Plans to Cut 700 More Jobs
- Best 15 Tools to Create Faceless YouTube Videos in 2024
- Dev Scripter 2024 - Biggest Technical Writing Event By GeeksforGeeks

GeeksforGeeks
Sanchhaya Education Private Limited

A-143, 9th Floor, Sovereign Corporate Tower, Sector-136, Noida, Uttar Pradesh - 201305

Company

- About Us
- Legal
- Careers
- In Media
- Contact Us
- Advertise with us
- GFG Corporate Solution
- Placement Training Program

Explore

- Job-A-Thon Hiring Challenge
- Hack-A-Thon
- GfG Weekly Contest
- Offline Classes (Delhi/NCR)
- DSA in JAVA/C++
- Master System Design
- Master CP
- GeeksforGeeks Videos
- Geeks Community

Languages

- Python
- Java
- C++
- PHP
- GoLang
- SQL
- R Language
- Android Tutorial
- Tutorials Archive

DSA

- Data Structures
- Algorithms
- DSA for Beginners
- Basic DSA Problems
- DSA Roadmap
- Top 100 DSA Interview Problems
- DSA Roadmap by Sandeep Jain
- All Cheat Sheets

Data Science & ML

- Data Science With Python
- Data Science For Beginner
- Machine Learning Tutorial
- ML Maths
- Data Visualisation Tutorial
- Pandas Tutorial
- NumPy Tutorial
- NLP Tutorial
- Deep Learning Tutorial

HTML & CSS

- HTML
- CSS
- Web Templates
- CSS Frameworks
- Bootstrap
- Tailwind CSS
- SASS
- LESS
- Web Design

Python

- Python Programming Examples
- Django Tutorial
- Python Projects
- Python Tkinter
- Web Scraping
- OpenCV Python Tutorial
- Python Interview Question

Computer Science

- GATE CS Notes
- Operating Systems
- Computer Network
- Database Management System
- Software Engineering
- Digital Logic Design
- Engineering Maths

DevOps

- Git
- AWS
- Docker
- Kubernetes
- Azure
- GCP
- DevOps Roadmap

Competitive Programming

- Top DS or Algo for CP
- Top 50 Tree
- Top 50 Graph
- Top 50 Array
- Top 50 String
- Top 50 DP
- Top 15 Websites for CP

System Design

- High Level Design
- Low Level Design
- UML Diagrams
- Interview Guide
- Design Patterns
- OOAD
- System Design Bootcamp
- Interview Questions

JavaScript

- JavaScript Examples
- TypeScript
- ReactJS
- NextJS
- AngularJS
- NodeJS
- Lodash
- Web Browser

NCERT Solutions

- Class 12
- Class 11
- Class 10
- Class 9
- Class 8
- Complete Study Material

School Subjects

- Mathematics
- Physics
- Chemistry
- Biology
- Social Science
- English Grammar

Commerce

- Accountancy
- Business Studies
- Economics
- Management
- HR Management
- Finance
- Income Tax

UPSC Study Material

- Polity Notes
- Geography Notes
- History Notes
- Science and Technology Notes
- Economy Notes
- Ethics Notes
- Previous Year Papers

SSC/ BANKING

- SSC CGL Syllabus
- SBI PO Syllabus
- SBI Clerk Syllabus
- IBPS PO Syllabus
- IBPS Clerk Syllabus
- SSC CGL Practice Papers

Colleges

- Indian Colleges Admission & Campus Experiences
- List of Central Universities - In India
- Colleges in Delhi University
- IIT Colleges
- NIT Colleges
- IIIT Colleges

Companies

- META Owned Companies
- Alphabhet Owned Companies
- TATA Group Owned Companies
- Reliance Owned Companies
- Fintech Companies
- EdTech Companies

Preparation Corner

- Company-Wise Recruitment Process
- Resume Templates
- Aptitude Preparation
- Puzzles
- Company-Wise Preparation

Exams

- JEE Mains
- JEE Advanced
- GATE CS
- NEET
- UGC NET

More Tutorials

- Software Development
- Software Testing
- Product Management
- SAP
- SEO - Search Engine Optimization
- Linux
- Excel

Free Online Tools

- Typing Test
- Image Editor
- Code Formatters
- Code Converters
- Currency Converter
- Random Number Generator
- Random Password Generator

Write & Earn

- Write an Article
- Improve an Article
- Pick Topics to Write
- Share your Experiences
- Internships