

find Command in Linux

The **find** command in Linux is used to search for files and directories in a directory hierarchy. It allows searching based on criteria such as name, size, type, permission, modification time, and more.

Basic Syntax:

```
bash
```

CopyEdit

find [path] [options] [expression]

- **[path]** → The directory where the search starts (e.g., **/home**, **/var/log**, **.** for the current directory).
- **[options]** → Conditions for filtering (e.g., **-name**, **-type**, **-size**).
- **[expression]** → Actions to perform on the matched files (e.g., **-exec**, **-delete**).

Common find Command Examples

1. Find a file by name:

```
bash
```

1. CopyEdit

1. **find /home -name "file.txt"**

1. ♦ Searches for **file.txt** inside **/home** and its subdirectories.

2. Find a file ignoring case (case-insensitive search):

```
bash
```

2. CopyEdit

2. **find /home -iname "file.txt"**

3. Find directories only:

```
bash
```

3. CopyEdit

3. **find /var/log -type d**

3. ♦ Searches only for directories (**-type d**).

4. Find files larger than 100MB:

```
bash
```

4. CopyEdit

4. **find / -size +100M**

4. ♦ Searches for files larger than 100MB (**+100M** means "more than 100MB").

5. Find empty files and directories:

```
bash
```

5. CopyEdit

5. **find /tmp -empty**

6. Find files modified in the last 7 days:

```
bash
```

6. CopyEdit

6. **find /var/log -mtime -7**

6. ♦ **-mtime -7** → Files modified in the last 7 days.

7. Find files and execute a command on them (-exec option):

```
bash
```

7. CopyEdit
7. **find /home -name "*.log" -exec rm {} \;**
7. ⌘ Finds all **.log** files in **/home** and deletes them.
8. **Find files with specific permissions:**

bash

8. CopyEdit
8. **find / -type f -perm 644**
8. ⌘ Finds all files with **644** permissions.
9. **Find and delete all .tmp files:**

bash

9. CopyEdit
9. **find /tmp -name "*.tmp" -delete**
10. **Find files owned by a specific user:**

bash

CopyEdit

find /home -user john

Scenario-Based Interview Questions on find

1. How do you find all files modified in the last 30 days?

💡 **Answer:**

bash

CopyEdit

find /path/to/directory -mtime -30

⌘ **-mtime -30** means files modified in the last 30 days.

2. How do you search for files larger than 500MB and delete them?

💡 **Answer:**

bash

CopyEdit

find / -size +500M -exec rm -f {} \;

⌘ **-size +500M** finds files larger than 500MB. ⌘ **-exec rm -f {} \;** deletes them.

3. How do you find all .log files in /var/log and compress them?

💡 **Answer:**

bash

CopyEdit

find /var/log -name "*.log" -exec gzip {} \;

⌘ Compresses **.log** files using **gzip**.

4. How do you find files with exact permission 777?

💡 **Answer:**

bash

CopyEdit

find / -type f -perm 777

⌘ Lists files with **777** [full read, write, execute] permissions.

5. How do you find and list all empty files in a system?

💡 **Answer:**

```
bash
```

CopyEdit

find / -type f -empty

- ◊ Finds all empty files (**-type f** for files, **-empty** for empty files).

6. How do you find all symbolic links in a directory?



Answer:

```
bash
```

CopyEdit

find /home -type l

- ◊ **-type l** searches for symbolic links.

7. How do you find files accessed in the last 2 days?



Answer:

```
bash
```

CopyEdit

find /home -atime -2

- ◊ **-atime -2** finds files accessed within the last 2 days.

8. How do you find all files owned by a specific group?



Answer:

```
bash
```

CopyEdit

find / -group developers

- ◊ Lists all files belonging to the **developers** group.

9. How do you find and delete all .bak files older than 60 days?



Answer:

```
bash
```

CopyEdit

find /backup -name "*.bak" -mtime +60 -exec rm {} \;

- ◊ **-mtime +60** selects files older than 60 days. ◊ **-exec rm {}** deletes them.

10. How do you list all files between 100MB and 1GB in size?



Answer:

```
bash
```

CopyEdit

find / -size +100M -size -1G

- ◊ **-size +100M** → Files larger than 100MB. ◊ **-size -1G** → Files smaller than 1GB.

These questions cover practical use cases of the **find** command, which are often asked in DevOps and Linux interviews. Let me know if you need more! 🚀

40

You said:

more question and answers

ChatGPT said:

Advanced find Command Interview Questions & Answers

11. How do you find and change the permissions of all .sh scripts to executable?



Answer:

```
bash
```

CopyEdit

find /scripts -name "*.sh" -exec chmod +x {} \;

- ◊ **-exec chmod +x {}** makes **.sh** files executable.**Advanced find Command Interview**

Questions & Answers

11. How do you find and change the permissions of all .sh scripts to executable?

 **Answer:**

```
find /scripts -name "*.sh" -exec chmod +x {} \;
```

- ◊ **-exec chmod +x {}** makes **.sh** files executable.

12. How do you find and copy all .conf files from /etc to /backup?

 **Answer:**

```
find /etc -name "*.conf" -exec cp {} /backup/ \;
```

- ◊ Finds all **.conf** files and copies them to **/backup**.

13. How do you find all files modified in the last 10 minutes?

 **Answer:**

```
find / -mmin -10
```

- ◊ **-mmin -10** finds files modified in the last 10 minutes.

14. How do you find and move all .log files older than 30 days to an archive folder?

 **Answer:**

```
find /var/log -name "*.log" -mtime +30 -exec mv {} /log_archive/ \;
```

- ◊ Moves old logs (**+30** days) to **/log_archive**.

15. How do you find all hidden files in a directory?

 **Answer:**

```
find /home -name ".*"
```

- ◊ Searches for files starting with **.** [hidden files].

16. How do you find all files containing the word “error” in their name?

 **Answer:**

```
find /var/log -type f -name "*error*"
```

- ◊ Finds files with "error" in their name.

17. How do you search for files modified between 5 and 10 days ago?

 **Answer:**

```
find /home -mtime +5 -mtime -10
```

- ◊ Finds files modified between 5 and 10 days ago.

18. How do you find and list all files owned by user john?

 **Answer:**

```
find / -user john
```

- ◊ Finds all files owned by **john**.

19. How do you find and delete files that are exactly 0 bytes in size?

 **Answer:**

```
find /tmp -type f -size 0 -delete
```

- ◊ Deletes empty (**0-byte**) files.

20. How do you find files that are executable by the owner?

 **Answer:**

```
find /usr/bin -type f -perm -u=x
```

- ◊ Lists files where the **owner** has **execute** permission.

21. How do you find all files modified in the last hour?

 **Answer:**

```
find /var -mmin -60
```

- ◊ **-mmin -60** finds files modified in the last 60 minutes.

22. How do you find all .txt files and list them with their sizes?

 **Answer:**

```
find /home -name "*.txt" -exec ls -lh {} \;
```

- ◊ Uses **ls -lh** to display file sizes.

23. How do you find and count the number of .log files?

 **Answer:**

```
find /var/log -name "*.log" | wc -l
```

- ◊ Counts the number of **.log** files.

24. How do you find files owned by a user but not readable by others?

 **Answer:**

```
find / -user john ! -perm -o=r
```

- ◊ **! -perm -o=r** ensures others can't read the file.

25. How do you find the 10 largest files in /var/log?

 **Answer:**

```
find /var/log -type f -exec du -h {} + | sort -rh | head -10
```

- ◊ Finds and lists the top 10 largest files.

26. How do you find files modified exactly 15 days ago?

 **Answer:**

```
find /home -mtime 15
```

- ◊ Finds files modified **exactly** 15 days ago.

27. How do you find all .log files but exclude error.log?

 **Answer:**

```
find /var/log -name "*.log" ! -name "error.log"
```

- ◊ **! -name "error.log"** excludes **error.log**.

28. How do you find all directories without execute permissions?

 **Answer:**

```
find /home -type d ! -perm -111
```

- ◊ Lists directories without execute (**x**) permission.

29. How do you find all files modified more than 100 days ago and delete them after confirmation?

 **Answer:**

```
find /backup -mtime +100 -exec rm -i {} \;
```

- ◊ **-exec rm -i {}** prompts before deletion.

30. How do you find and rename all .txt files to .bak?

 **Answer:**

```
find /data -name "*.txt" -exec mv {} {}.bak \;
```

- ◊ Renames **.txt** files to **.bak**.

Advanced find Command Interview Questions with In-Depth Explanations

Here are more **scenario-based** interview questions with **detailed explanations**, covering practical real-world DevOps use cases.

31. How do you find files modified between 3 and 7 days ago and list them in human-readable format?

 **Answer:**

```
find /var/log -mtime +3 -mtime -7 -exec ls -lh {} \;
```

Explanation:

- **-mtime +3** → Files **older** than 3 days.
- **-mtime -7** → Files **newer** than 7 days ago.
- **-exec ls -lh {}** → Lists the files in **human-readable format** (**-lh** gives sizes in KB/MB/GB).
- ◊ **Use case:** Debugging **logs** that are between 3-7 days old without searching too far back.

32. How do you find all .log files larger than 200MB and move them to /backup?

 **Answer:**

```
find /var/log -name "*.log" -size +200M -exec mv {} /backup/ \;
```

Explanation:

- **-name "*.log"** → Only find **.log** files.
- **-size +200M** → Selects files larger than **200MB**.
- **-exec mv {}** → Moves the file to **/backup/**.

- ◊ **Use case: Log rotation**—when large log files need to be archived before they fill up disk space.

33. How do you find and delete all .tmp files except those modified in the last 2 days?

 **Answer:**

```
find /tmp -name "*.tmp" -mtime +2 -delete
```

Explanation:

- **-name "*.tmp"** → Finds all temporary (.tmp) files.
- **-mtime +2** → Only delete files **older than** 2 days.
- **-delete** → Deletes them.
- ◊ **Use case:** Automating cleanup of **old temp files** while keeping recent ones.

34. How do you find files owned by a specific user (john) but NOT accessed in the last 30 days?

 **Answer:**

```
find /home -user john -atime +30
```

Explanation:

- **-user john** → Find files owned by **john**.
- **-atime +30** → Files **not accessed** in the last 30 days.
- ◊ **Use case:** Identifying **stale** user files that can be archived or deleted.

35. How do you find symbolic links pointing to a missing target (broken symlinks)?

 **Answer:**

```
find /home -type l ! -exec test -e {} \; -print
```

Explanation:

- **-type l** → Finds **symbolic links**.
- **! -exec test -e {}** → **Negates** (!) the test if the target file **does not exist**.
- **-print** → Displays broken symlinks.
- ◊ **Use case:** **Fixing broken symlinks** that may cause application failures.

36. How do you find files with exact permissions of 644?

 **Answer:**

```
find / -type f -perm 644
```

Explanation:

- **-type f** → Search only **files**.
- **-perm 644** → Finds files with **exact rw-r--r--** permissions.
- ◊ **Use case:** **Security auditing** to check for **incorrectly configured** file permissions.

37. How do you find directories with 777 permissions and change them to 755?

 **Answer:**

```
find /var/www -type d -perm 777 -exec chmod 755 {} \;
```

Explanation:

- **-type d** → Finds **directories only**.
- **-perm 777** → Matches directories with **rw-rw-rw-** (dangerous permission).
- **-exec chmod 755 {}** → Changes permissions to **rw-r-xr-x**.
- ◊ **Use case:** Fixing **misconfigured permissions** that can lead to security vulnerabilities.

38. How do you find all files belonging to a specific group (developers)?

 **Answer:**

```
find /home -group developers
```

Explanation:

- **-group developers** → Finds files owned by the **developers** group.
- ◊ **Use case:** Checking **group ownership issues** in multi-user systems.

39. How do you search for files that belong to a specific user (john) and have write permission for others?

 **Answer:**

```
find /home -user john -perm -o=w
```

Explanation:

- **-user john** → Files owned by **john**.
- **-perm -o=w** → Files with **write permission for others**.
- ◊ **Use case:** **Security audits**—detecting world-writable files that pose a risk.

40. How do you find files modified more than 90 days ago and compress them?

 **Answer:**

```
find /var/log -mtime +90 -exec gzip {} \;
```

Explanation:

- **-mtime +90** → Finds files **older than** 90 days.
- **-exec gzip {}** → Compresses them using **gzip**.
- ◊ **Use case:** Automating **log compression** to save space.

41. How do you find files in /home and display only their names (without full path)?

 **Answer:**

```
find /home -type f -printf "%f\n"
```

Explanation:

- **-printf "%f\n"** → Prints only **file names**, **not** full paths.
- ◊ **Use case:** Generating a **simple list** of files.

42. How do you find files that are NOT owned by any user (orphaned files)?

 **Answer:**

```
find / -nouser
```

Explanation:

- **-nouser** → Finds files with **no valid owner** (orphaned).

- ◊ **Use case:** Detecting **leftover files** from deleted user accounts.

43. How do you find all .sh scripts in /usr/bin and print their execution time?

 **Answer:**

```
find /usr/bin -name "*.sh" -exec time {} \;
```

Explanation:

- **-exec time {}** → Runs each script and **prints execution time**.
- ◊ **Use case:** **Performance testing** for scripts.

44. How do you find all .log files and replace “ERROR” with “WARNING” inside them?

 **Answer:**

```
find /var/log -name "*.log" -exec sed -i 's/ERROR/WARNING/g' {} \;
```

Explanation:

- **sed -i 's/ERROR/WARNING/g' {}** → Modifies files **in-place**, replacing text.
- ◊ **Use case:** **Log sanitization** before sharing logs.

45. How do you find all .py files in /scripts and check their syntax?

 **Answer:**

```
find /scripts -name "*.py" -exec python3 -m py_compile {} \;
```

Explanation:

- **-exec python3 -m py_compile {}** → Checks Python syntax for each file.
- ◊ **Use case:** **Automated syntax validation** before deployment.

46. How do you find all images (.jpg, .png) and move them to /images?

 **Answer:**

```
find /home -type f \( -name "*.jpg" -o -name "*.png" \) -exec mv {} /images/ \;
```

Explanation:

- **\(-name "*.jpg" -o -name "*.png" \)** → Matches **both .jpg and .png**.
- ◊ **Use case:** Organizing **image files**.

These **deep-dive** questions will prepare you for **real-world DevOps/Linux interviews**! Let me know if you need **even more!** 🚀

Expert-Level find Command Interview Questions with Deep Explanations

These questions are crafted for **senior-level** DevOps/Linux roles, covering **real-world automation, security audits, and performance tuning**.

47. How do you find all regular files in /var that have no read permission for the owner?

 **Answer:**

```
find /var -type f ! -perm -400
```

Explanation:

- **-type f** → Searches only **regular files**.
- **! -perm -400** → Finds files **without read permission (r) for the owner**.
- ◊ **Use case:** Detecting **misconfigured permissions** that could prevent access.

48. How do you find files larger than 500MB and delete them after confirmation?

 **Answer:**

```
find / -type f -size +500M -exec rm -i {} \;
```

Explanation:

- **-size +500M** → Finds files **larger than 500MB**.
- **-exec rm -i {}** → **Prompts** before deletion.
- ◊ **Use case:** **Freeing up space** while preventing accidental deletion.

49. How do you find the top 10 largest files in /var/log and sort them by size?

 **Answer:**

```
find /var/log -type f -exec du -h {} + | sort -rh | head -10
```

Explanation:

- **du -h {}** → Shows **human-readable file sizes**.
- **sort -rh** → Sorts in **descending order**.
- **head -10** → Displays the **top 10 largest** files.
- ◊ **Use case:** Identifying **huge log files** that need rotation or compression.

50. How do you find .log files larger than 1GB and compress them in place?

 **Answer:**

```
find /var/log -type f -name "*.log" -size +1G -exec gzip {} \;
```

Explanation:

- **-size +1G** → Finds files **larger than 1GB**.
- **-exec gzip {}** → Compresses them with **gzip**.
- ◊ **Use case:** **Log rotation automation**.

51. How do you find .log files older than 30 days and move them to an archive folder, keeping directory structure?

 **Answer:**

```
find /var/log -type f -name "*.log" -mtime +30 -exec mv --parents {}  
/backup/logs/ \;
```

Explanation:

- **-mtime +30** → Finds files **older than 30 days**.
- **--parents** → **Preserves the directory structure** inside **/backup/logs/**.
- ◊ **Use case:** Maintaining **organized log backups**.

52. How do you find and replace text inside multiple files using find and sed?

 **Answer:**

```
find /var/www -type f -name "*.html" -exec sed -i 's/oldword/newword/g' {} \;
```

Explanation:

- **-name "*.html"** → Targets **HTML files**.
- **sed -i 's/oldword/newword/g' {}** → **Replaces text** in-place.
- ◊ **Use case: Mass text updates** in configurations or web pages.

53. How do you find all files modified in the last hour and copy them to a backup folder?

 **Answer:**

```
find /home -mmin -60 -exec cp --parents {} /backup/ \;
```

Explanation:

- **-mmin -60** → Finds files **modified in the last hour**.
- **--parents** → Maintains **original directory structure**.
- ◊ **Use case: Incremental backups**.

54. How do you find all executable files inside /usr/local/bin?

 **Answer:**

```
find /usr/local/bin -type f -perm -111
```

Explanation:

- **-perm -111** → Finds files that are **executable by owner, group, or others**.
- ◊ **Use case: Listing all installed binaries**.

55. How do you find files that are exactly 100MB in size?

 **Answer:**

```
find /data -type f -size 100M
```

Explanation:

- **-size 100M** → Matches files **exactly** 100MB in size.
- ◊ **Use case: Identifying specific-sized files**.

56. How do you find all .txt files in /home and count the number of lines in each?

 **Answer:**

```
find /home -name "*.txt" -exec wc -l {} +
```

Explanation:

- **wc -l {}** → Counts **lines** in each file.
- ◊ **Use case: Analyzing text file content**.

57. How do you find empty directories and remove them?

 **Answer:**

```
find /tmp -type d -empty -delete
```

Explanation:

- **-type d -empty** → Selects **empty directories**.

- **-delete** → Deletes them.
- ◊ **Use case:** Cleaning **stale directories**.

58. How do you find files with setuid [s] permission?

 **Answer:**

```
find / -perm -4000
```

Explanation:

- **-perm -4000** → Finds files with **setuid** permission [s].
- ◊ **Use case:** Security audits to find **privilege escalation risks**.

59. How do you find and remove broken symbolic links?

 **Answer:**

```
find /home -type l ! -exec test -e {} \; -delete
```

Explanation:

- **-type l** → Finds **symbolic links**.
- **! -exec test -e {}** → Filters **broken symlinks**.
- **-delete** → Deletes them.
- ◊ **Use case:** **Fixing symlink issues** in applications.

60. How do you find files owned by deleted users (orphaned files)?

 **Answer:**

```
find / -nouser
```

Explanation:

- **-nouser** → Finds files **without an owner** [user deleted].
- ◊ **Use case:** Identifying **dangling files**.

61. How do you find all .sh files and check their syntax errors?

 **Answer:**

```
find /scripts -name "*.sh" -exec bash -n {} \;
```

Explanation:

- **bash -n {}** → Checks **script syntax** without executing.
- ◊ **Use case:** **Validating shell scripts** before deployment.

62. How do you find files with special characters in their name?

 **Answer:**

```
find /home -name "*[\\?\\*\\[\\]*"
```

Explanation:

- ***[\\?*\\[\\]*** → Matches files containing **?, *, [,]**.
- ◊ **Use case:** **Fixing problematic file names**.

63. How do you find files modified in the last 24 hours and display their last modification time?

 **Answer:**

```
find /var/log -mtime -1 -exec ls -lt {} +
```

Explanation:

- **ls -lt {}** → Sorts by **modification time**.
- ◊ **Use case:** Checking **recently modified logs**.

These **expert-level** questions will help you ace **Linux/DevOps interviews**. Let me know if you need **even more deep-dive scenarios!** 🚀

Here are **even more advanced find** command interview questions, tailored for **real-world DevOps, automation, security, and performance tuning**.

64. How do you find and change ownership of all .conf files inside /etc to admin:admin?

💡 **Answer:**

```
find /etc -type f -name "*.conf" -exec chown admin:admin {} \;
```

Explanation:

- **-name "*.conf"** → Finds all configuration files.
- **-exec chown admin:admin {}** → Changes **ownership** recursively.
- ◊ **Use case:** Correcting **wrong permissions** after system migrations.

65. How do you find files inside /var that were modified exactly 15 days ago?

💡 **Answer:**

```
find /var -type f -mtime 15
```

Explanation:

- **-mtime 15** → Finds files modified **exactly** 15 days ago.
- ◊ **Use case:** Checking **specific file changes** for audits.

66. How do you find and list all files in /etc that have been modified in the last 24 hours, but ignore symbolic links?

💡 **Answer:**

```
find /etc -type f -mtime -1 -ls
```

Explanation:

- **-type f** → Ignores **symlinks** (l type).
- **-ls** → Lists file details.
- ◊ **Use case:** **Tracking recent system configuration changes**.

67. How do you find files with execute permission for group (g=x) and remove it?

💡 **Answer:**

```
find /usr/bin -type f -perm -010 -exec chmod g-x {} \;
```

Explanation:

- **-perm -010** → Matches files where **group has execute (x) permission**.
- **chmod g-x {}** → **Removes** execute permission for group.
- ◊ **Use case:** Fixing **wrong permission setups** for shared binaries.

68. How do you find files owned by john but NOT belonging to the developers group?

 **Answer:**

```
find /home -user john ! -group developers
```

Explanation:

- **-user john** → Finds files **owned by john**.
- **! -group developers** → **Excludes** files in **developers** group.
- ◊ **Use case:** Checking **group membership inconsistencies**.

69. How do you find all empty files in /tmp and list them with full paths?

 **Answer:**

```
find /tmp -type f -empty -printf "%p\n"
```

Explanation:

- **-empty** → Filters **empty files**.
- **-printf "%p\n"** → Prints **full path**.
- ◊ **Use case:** Identifying **useless temporary files**.

70. How do you find all .sh files and rename them to .bash?

 **Answer:**

```
find /scripts -type f -name "*.sh" -exec bash -c 'mv "$1" "${1%.sh}.bash"' _ {} \;
```

Explanation:

- **mv "\$1" "\${1%.sh}.bash"** → **Renames .sh to .bash**.
- ◊ **Use case:** **Standardizing script naming conventions**.

71. How do you find files in /logs that are NOT readable by anyone (000 permissions)?

 **Answer:**

```
find /logs -type f -perm 000
```

Explanation:

- **-perm 000** → Matches files with **no read/write/execute** permission.
- ◊ **Use case:** Detecting **inaccessible log files**.

72. How do you find all files inside /var/logs modified between 10 and 20 days ago?

 **Answer:**

```
find /var/logs -mtime +10 -mtime -20
```

Explanation:

- **-mtime +10** → Files **older than** 10 days.
- **-mtime -20** → Files **newer than** 20 days.
- ◊ **Use case:** **Selective log cleanup**.

73. How do you find all .py files and run a lint check on them?



Answer:

```
find /code -type f -name "*.py" -exec pylint {} \;
```

Explanation:

- **pylint {}** → Runs **code quality check** on Python files.
- ◊ **Use case: Automated script validation.**

74. How do you find and delete all log files but keep the 5 most recent ones?



Answer:

```
find /var/log -type f -name "*.log" -printf "%T@ %p\n" | sort -n | head -n -5 |  
awk '{print $2}' | xargs rm
```

Explanation:

- **printf "%T@ %p\n"** → Prints **timestamp and filename**.
- **sort -n** → Sorts by **oldest to newest**.
- **head -n -5** → **Excludes** the last 5 (most recent).
- **xargs rm** → Deletes the older logs.
- ◊ **Use case: Disk space management** while keeping recent logs.

75. How do you find all files in /var that are hard links?



Answer:

```
find /var -type f -links +1
```

Explanation:

- **-links +1** → Finds files with **multiple hard links**.
- ◊ **Use case: Identifying files with duplicate inodes.**

76. How do you find all symbolic links pointing to a specific target (/bin/bash)?



Answer:

```
find / -type l -lname "/bin/bash"
```

Explanation:

- **-lname "/bin/bash"** → Finds **symlinks pointing to /bin/bash**.
- ◊ **Use case: Debugging broken or incorrect symlinks.**

77. How do you find and change permissions of .sh scripts to 755?



Answer:

```
find /scripts -type f -name "*.sh" -exec chmod 755 {} \;
```

Explanation:

- **chmod 755 {}** → Ensures scripts are executable.
- ◊ **Use case: Fixing script execution issues.**

78. How do you find and replace ERROR with INFO in .log files but keep a backup?



Answer:

```
find /logs -type f -name "*.log" -exec sed -i.bak 's/ERROR/INFO/g' {} \;
```

Explanation:

- **-i.bak** → Creates a **backup** before modifying.
- ◊ **Use case: Safe log modifications.**

79. How do you find .tar.gz archives and extract them in the same location?



Answer:

```
find /backups -type f -name "*.tar.gz" -exec tar -xzf {} -C $(dirname {}) \;
```

Explanation:

- **tar -xzf {}** → Extracts **each archive** in its directory.
- ◊ **Use case: Automated archive extraction.**

80. How do you find and remove files that have not been accessed in over a year?



Answer:

```
find /data -type f -atime +365 -delete
```

Explanation:

- **-atime +365** → Finds files **not accessed in over 1 year**.
- ◊ **Use case: Archiving unused files.**



These are some of the most advanced find command scenarios for real-world DevOps, automation, and security cases!

Would you like **scenario-based Shell Scripting** interview questions next?

Here are **more expert-level find command interview questions** for **real-world DevOps, automation, security, and performance tuning** scenarios.

81. How do you find all executable files in /usr/bin that belong to root?



Answer:

```
find /usr/bin -type f -user root -perm -111
```

Explanation:

- **-user root** → Finds files owned by **root**.
- **-perm -111** → Matches **executable** files.
- ◊ **Use case: Checking for potential security risks.**

82. How do you find .log files larger than 100MB and move them to /backup/logs/?



Answer:

```
find /var/log -type f -name "*.log" -size +100M -exec mv {} /backup/logs/ \;
```

Explanation:

- Moves **large log files** to prevent excessive disk usage.
- ◊ **Use case: Log management and archiving.**

83. How do you find all files inside /etc with 777 permissions and fix them to 644?

 **Answer:**

```
find /etc -type f -perm 777 -exec chmod 644 {} \;
```

Explanation:

- **-perm 777** → Finds **world-writable** files.
- **chmod 644** → Restricts to **owner read/write, others read-only**.
- ◊ **Use case: Hardening security** in system files.

84. How do you find and delete .tmp files older than 7 days, but first list them for review?

 **Answer:**

```
find /tmp -type f -name "*.tmp" -mtime +7 -print  
find /tmp -type f -name "*.tmp" -mtime +7 -delete
```

Explanation:

- First command lists files for **review**.
- Second command **deletes** them.
- ◊ **Use case: Preventing accidental deletions**.

85. How do you find all .sh scripts in /scripts that are NOT executable?

 **Answer:**

```
find /scripts -type f -name "*.sh" ! -perm -100
```

Explanation:

- **! -perm -100** → **Excludes executable scripts**.
- ◊ **Use case: Finding misconfigured shell scripts**.

86. How do you find files inside /home that belong to deleted users?

 **Answer:**

```
find /home -nouser
```

Explanation:

- **-nouser** → Finds files **without a valid owner**.
- ◊ **Use case: Identifying orphaned files**.

87. How do you find and compress all .log files larger than 500MB?

 **Answer:**

```
find /var/log -type f -name "*.log" -size +500M -exec gzip {} \;
```

Explanation:

- **gzip {}** → Reduces **disk space usage**.
- ◊ **Use case: Automating log rotation**.

88. How do you find all files inside /var that are writable by others (o=w)?

 **Answer:**

```
find /var -type f -perm -002
```

Explanation:

- **-perm -002** → Finds **world-writable** files.
- ◊ **Use case: Detecting security vulnerabilities.**

89. How do you find .conf files that were modified in the last 2 hours?

 **Answer:**

```
find /etc -type f -name "*.conf" -mmin -120
```

Explanation:

- **-mmin -120** → Finds files **modified in the last 120 minutes**.
- ◊ **Use case: Tracking recent configuration changes.**

90. How do you find and remove all empty directories in /tmp?

 **Answer:**

```
find /tmp -type d -empty -delete
```

Explanation:

- **-empty** → Matches **empty directories**.
- ◊ **Use case: Cleaning unnecessary folders.**

91. How do you find and rename .txt files to .bak inside /data?

 **Answer:**

```
find /data -type f -name "*.txt" -exec bash -c 'mv "$1" "${1%.txt}.bak"' _ {} \;
```

Explanation:

- **Batch renaming** for **file extensions**.
- ◊ **Use case: Data backup automation.**

92. How do you find and delete broken symbolic links inside /home?

 **Answer:**

```
find /home -type l ! -exec test -e {} \; -delete
```

Explanation:

- **! -exec test -e {}** → Identifies **broken links**.
- ◊ **Use case: Fixing stale symlinks.**

93. How do you find files that belong to the root group but are NOT owned by root?

 **Answer:**

```
find / -type f ! -user root -group root
```

Explanation:

- **! -user root** → Excludes root-owned files.
- ◊ **Use case:** Permission inconsistency checks.

94. How do you find all files inside /var/www that have been accessed in the last 30 minutes?

 **Answer:**

```
find /var/www -type f -amin -30
```

Explanation:

- **-amin -30** → Finds files accessed in the last 30 minutes.
- ◊ **Use case:** Tracking real-time web activity.

95. How do you find all files in /etc that have their SUID bit set?

 **Answer:**

```
find /etc -type f -perm -4000
```

Explanation:

- **-perm -4000** → Identifies SUID binaries.
- ◊ **Use case:** Security audits for privilege escalation risks.

96. How do you find all .log files and delete only the oldest ones, keeping the 10 most recent?

 **Answer:**

```
find /var/log -type f -name "*.log" -printf "%T@ %p\n" | sort -n | head -n -10 |  
awk '{print $2}' | xargs rm
```

Explanation:

- **sort -n** → Sorts oldest first.
- **head -n -10** → Keeps the last 10 files.
- ◊ **Use case:** Automated log cleanup.

97. How do you find all files in /opt that are NOT owned by any existing group?

 **Answer:**

```
find /opt -nogroup
```

Explanation:

- **-nogroup** → Matches orphaned files.
- ◊ **Use case:** Finding misconfigured file ownerships.

98. How do you find and count all .log files modified today?

 **Answer:**

```
find /var/log -type f -name "*.log" -mtime 0 | wc -l
```

Explanation:

- **wc -l** → Counts **matching files**.