lsof Cheatsheet

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Quick reference for finding open files, processes, ports, and deleted files with lsof in Linux

The `lsof` command lists open files and the processes using them in Linux. This cheatsheet covers common filters for ports, users, PIDs, directories, deleted files, and practical troubleshooting patterns.

Basic Syntax

Core `lsof` command forms.

`lsof`	List open files visible to the current user
`sudo lsof`	List open files system-wide
`lsof /path/to/file`	Show which process has a file open
`lsof -p 1234`	Show files opened by one PID
`lsof -u username`	Show files opened by one user

Port and Network Checks

Find listeners and active network connections.

`sudo lsof -nP -iTCP:80 -sTCP:LISTEN`	Find what is listening on TCP port 80
`sudo lsof -i`	List all network connections
`sudo lsof -i TCP`	List TCP connections
`sudo lsof -i UDP`	List UDP connections
`sudo lsof -nP -iTCP:443 -sTCP:LISTEN`	Filter to listeners on TCP port 443

Process and User Filters

Filter open files by process, command name, or user.

`sudo lsof -p 1234`	Files opened by PID 1234
`sudo lsof -p ^1234`	Exclude PID 1234
`sudo lsof -c nginx`	Files opened by commands starting with `nginx`
`lsof -u john`	Files opened by user `john`
`sudo lsof -u ^john`	Exclude files opened by user `john`

Files and Directories

Check who is using a file or directory tree.

`lsof /var/log/nginx/access.log`	Show processes using one file
`sudo lsof +d /var/log`	Show open files in one directory level
`sudo lsof +D /var/log`	Show open files in a directory recursively
`sudo lsof +D /mountpoint`	Find what is blocking an unmount
`sudo lsof /dev/sda`	Check processes using a device file

Deleted Files and Disk Space

Find deleted files that still consume disk space.

`sudo lsof +L1`	List deleted files still held open
`sudo lsof +L1 /var`	Limit deleted-file search to one path
`sudo lsof -a +L1 -u nginx`	Deleted files still open for one user
`sudo lsof +L1 | sort -k7 -n`	Sort deleted-file output by size/off column
`sudo lsof +L1 | grep deleted`	Quick filter for deleted entries

Scripting and Combined Filters

Use `lsof` in scripts and tighter searches.

`sudo lsof -t -iTCP:8080 -sTCP:LISTEN`	Output only the PID listening on port 8080
`sudo lsof -a -u john -i TCP`	Show only TCP connections owned by `john`
`sudo lsof -a -p 1234 -d cwd`	Show only the current working directory for one PID
`sudo lsof -Fn -p 1234`	Machine-readable output for scripts
`kill $(sudo lsof -t -iTCP:8080 -sTCP:LISTEN)`	Stop the process listening on port 8080

Troubleshooting

Quick checks for common `lsof` usage issues.

Output looks incomplete	Run with `sudo` to see files opened by other users' processes
Port lookup shows service names instead of numbers	Add `-nP` for numeric addresses and ports
Need listeners only, not all connections	Add `-sTCP:LISTEN` with `-iTCP:PORT`
Recursive directory search is slow	Prefer `+d` for top-level only, or narrow the path
Disk space is still not freed after delete	Use `lsof +L1` and restart the process holding the file

Related Guides

Use these guides for the full walkthroughs.

lsof Command in Linux	Full `lsof` guide with examples
ss Command in Linux	Inspect sockets and listening services
How to Check Listening Ports in Linux	Compare `ss`, `netstat`, and `lsof`
Find Large Files in Linux	Track disk usage and deleted files
ps Command in Linux	Inspect processes and related details