

Where is "journalctl" data stored?

When I issue `journalctl` I get a massive log of all system services, but where is all this information stored?

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log

systemd

systemd-journald



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4 Answers

From `man systemd-journald` :

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FILES

```
/etc/systemd/journald.conf
    Configure systemd-journald behavior. See journald.conf(5).

/run/log/journal/machine-id/*.journal,
/run/log/journal/machine-id/*.journal~,
/var/log/journal/machine-id/*.journal,
/var/log/journal/machine-id/*.journal~
    systemd-journald writes entries to files in
    /run/log/journal/machine-id/ or /var/log/journal/machine-id/ with
    the ".journal" suffix. If the daemon is stopped uncleanly, or if
    the files are found to be corrupted, they are renamed using the
    ".journal~" suffix, and systemd-journald starts writing to a new
    file. /run is used when /var/log/journal is not available, or when
    Storage=volatile is set in the journald.conf(5) configuration file.
```

And as `man journalctl` says:

```
journalctl may be used to query the contents of the systemd(1) journal
as written by systemd-journald.service(8).
```

These logs are managed by the `systemd-journald` service, so a more appropriate term would be "journald logs".

Thanks for the correction, but suppose a noob like me will search for that too so I guess it is better left this way. A follow-up question - are these logs safe to delete? – php_nub_qq Dec 26 '16 at 15:57

- 4 Well, logs are safe to delete unless you need the information from them later on. – muru Dec 26 '16 at 16:01
- Note that by default, systemd will delete older logs as they approach a certain percentage of disk space used. – mattdm Dec 26 '16 at 16:59

Note however that Ubuntu is not using a persistent journald log file by default. Only the volatile `/run/log/journal/<machine-id>/*.journal[~]` is kept until the next boot. All is lost at each reboot.

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You may see a list of boot retained in the log with:

```
journalctl --list-boot
```

The logs are still kept in a text file under `/var/log` unless you have activated the use of persistent journald log by creating `/var/log/journal` directory.

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- 5 However, the journald log arguably *should* be persistent by default. [bug #1618188] (bugs.launchpad.net/ubuntu/+source/systemd/+bug/1618188) has been opened to track the progress of this change. Check there for the latest status. – Mark Stosberg Dec 26 '16 at 22:10
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Short answer

- 1 Usually the storage directory is `/var/log/journal` or `/run/log/journal` , but it doesn't have to necessarily exist in your system.

If you just want to check the amount of space that the journal is currently occupying on your disk, simply type:

```
$ journalctl --disk-usage
```

Long answer

The storage directory depends on journald configuration.

Configuration files are:

```
/etc/systemd/journal.conf
/etc/systemd/journal.conf.d/*.conf
/run/systemd/journal.conf.d/*.conf
/usr/lib/systemd/journal.conf.d/*.conf
```

There the "`Storage=`" option controls whether to store journal data or not, and where. Possible values are "`volatile`", "`persistent`", "`auto`" and "`none`". Defaults to "`auto`".

If "`volatile`", journal log data will be stored only in memory, i.e. below the `/run/log/journal` hierarchy (which is created if needed).

If "`persistent`", data will be stored preferably on disk, i.e. below the `/var/log/journal` hierarchy (which is created if needed), with a fallback to `/run/log/journal` (which is created if needed), during early boot and if the disk is not writable.

"`auto`" is similar to "`persistent`" but the directory `/var/log/journal` is **not** created if needed, so that its existence controls where log data goes.

"`none`" turns off all storage, all log data received will be dropped.

In addition to Muru's answer on where data is stored there are other relevant answers.

0 How to increase `journalctl` to find previous boot logs

```
$ sudo mkdir -p /var/log/journal
$ sudo systemd-tmpfiles --create --prefix /var/log/journal
```

How to keep `journalctl` file size down

```
$ journalctl --vacuum-size=200M
Deleted archived journal
/var/log/journal/d7b25a27fe064cadb75a2f2f6ca7764e/system@00056515dbdd9a4e-
a6fe2ec77e516045.journal~ (56.0M).
Deleted archived journal /var/log/journal/d7b25a27fe064cadb75a2f2f6ca7764e/user-
65534@00056515dbfe731d-b7bab56cb4efcbf6.journal~ (8.0M).
Deleted archived journal /var/log/journal/d7b25a27fe064cadb75a2f2f6ca7764e/user-
1000@1bbb77599cf14c65a18af51646751696-000000000000064f-00056444d58433e1.journal (112.0M).
Vacuuming done, freed 176.0M of archived journals on disk.
```
