Replace GIFs with video

- Measure first
- Get FFmpeg
- Open the console
- Change GIF to video
- Create WebM videos
- Update HTML to recreate GIF effect
- Specify your sources
- Preview
- Verify with Lighthouse

In this codelab, improve performance by replacing an animated GIF with a video.

Measure first

First measure how the website performs:

When you're finished, you should see that Lighthouse has flagged the GIF as an issue in its "Use video formats for animated content" audit.

Get FFmpeg

There are a number of ways you can convert GIFs to video; this guide uses **FFmpeg**. It's already installed in the Glitch VM, and, if you want, you can follow these instructions to install it on your local machine as well.

Open the console

Double-check that FFmpeg is installed and working:

1. In the console, run:

```
which ffmpeg
```

You should get a file path back:

```
/usr/bin/ffmpeg
```

Change GIF to video

- In the console, run `cd images` to enter the images directory.
- Run `ls` to see the contents.

You should see something like this:

```
$ ls
cat-herd.gif
```

- In the console, run:

```
ffmpeg -i cat-herd.gif -b:v 0 -crf 25 -f mp4 -vcodec libx264 -pix_fmt yuv420p cat-herd.mp4
```

This tells FFmpeg to take the **input**, signified by the `-i` flag, of cat-herd.gif and convert it to a video called cat-herd.mp4. This should take a second to run. When the command finishes, you should be able to type `ls` again and see two files:

```
$ ls
cat-herd.gif  cat-herd.mp4
```

Create WebM videos

While MP4 has been around since 1999, WebM is a relative newcomer having been initially released in 2010. WebM videos can be much smaller than MP4 videos, so it makes sense to generate both. Thankfully the `<video>` element will let you add multiple sources, so if a browser doesn't support WebM, it can fallback to MP4.

- In the console, run:

```
ffmpeg -i cat-herd.gif -c vp9 -b:v 0 -crf 41 cat-herd.webm
```

- To check the file sizes run:

```
ls -lh
```

You should have one GIF, and two videos:

```
$ ls -lh
total 4.5M
-rw-r--r-- 1 app app 3.7M May 26 00:02 cat-herd.gif
-rw-r--r-- 1 app app 551K May 31 17:45 cat-herd.mp4
-rw-r--r-- 1 app app 341K May 31 17:44 cat-herd.webm
```

Notice that the original GIF is 3.7M, whereas the MP4 version is 551K, and the WebM version is only 341K. That's a huge savings!

Update HTML to recreate GIF effect

Animated GIFs have three key traits that videos need to replicate:

- They play automatically.
- They loop continuously (usually, but it is possible to prevent looping).
- They're silent.

Luckily, you can recreate these behaviors using the `<video>` element.

- In the `index.html` file, replace the line with the `<img>` with:

```
<img src="/images/cat-herd.gif" alt="Cowboys herding cats.">
<video autoplay loop muted playsinline></video>
```

A `<video>` element using these attributes will play automatically, loop endlessly, play no audio, and play inline (that is, not fullscreen), all the behaviors expected of animated GIFs! □□

Specify your sources

All that's left to do is specify your video sources. The `<video>` element requires one or more `<source>` child elements pointing to different video files the browser can choose from, depending on format support. Update the `<video>` with `<source>` elements that link to your cat-herd videos:

```
<video autoplay loop muted playsinline>
  <source src="/images/cat-herd.webm" type="video/webm">
  <source src="/images/cat-herd.mp4" type="video/mp4">
</video>
```

Browsers don't speculate about which `<source>` is optimal, so the order of `<source>`s matters. For example, if you specify an MP4 video first and the browser supports WebM, browsers will skip the WebM `<source>` and use the MPEG-4 instead. If you prefer a WebM `<source>` be used first, specify it first!

Preview

The experience should look the same. So far so good.

Verify with Lighthouse

With the live site open:

You should see that the "Use video formats for animated content" audit is now passing! Woohoo! □□

□□□ #3
□ □□□ □□□ 2026-10-31 22:34:05 UTC
□ cocobook-sync □□□ 2026-11-04 17:38:45 UTC