

## USING NEXT-GEN IMAGE FORMAT TO ENHANCE YOUR APP'S PERFORMANCE (REACT)

**Problem:** Slow loading time on an application's pages.

### Introduction

#### Why serve images in WebP format

JPEG 2000, JPEG XR, and WebP are image formats that have superior compression and quality characteristics compared to their older JPEG and PNG counterparts. Encoding your images in these formats rather than JPEG or PNG means that they will load faster and consume less cellular data.

WebP is supported in Chrome and Opera and provides better lossy and lossless compression for images on the web. See [A New Image Format For The Web](#) for more on WebP.

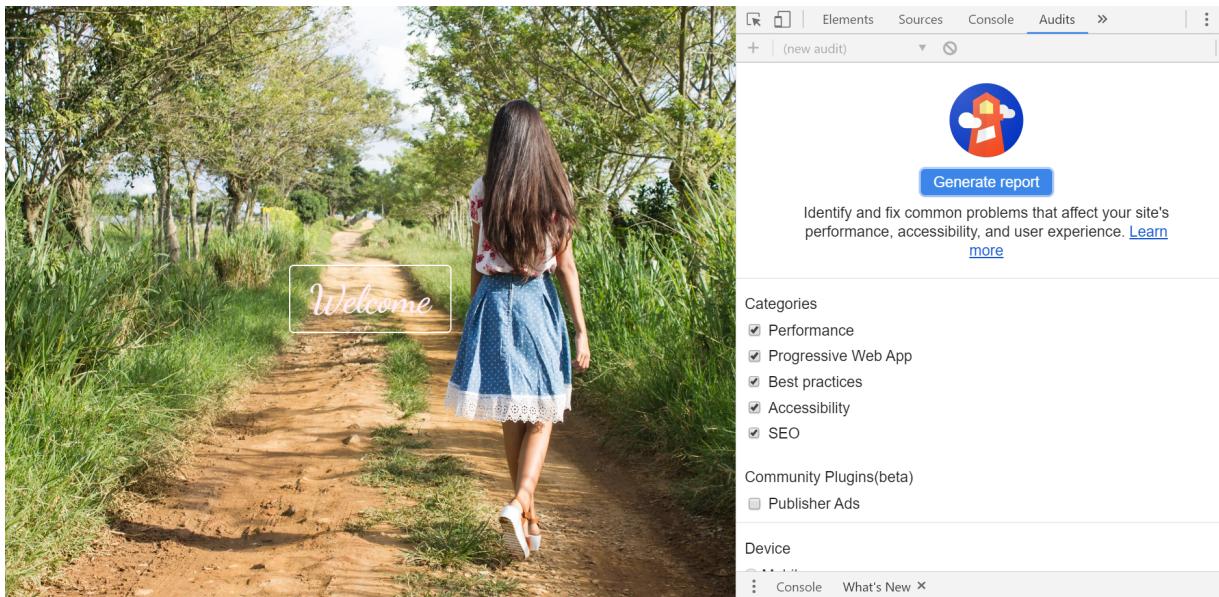
Source: [https://web.dev/uses-webp-images/?utm\\_source=lighthouse&utm\\_medium=devtools](https://web.dev/uses-webp-images/?utm_source=lighthouse&utm_medium=devtools)

### Lighthouse

For best results, run Lighthouse in incognito mode. While in Chrome, run <Control> + <Shift> + N to open incognito mode. Then, go to your URL, open the developer tools, and select Audits.

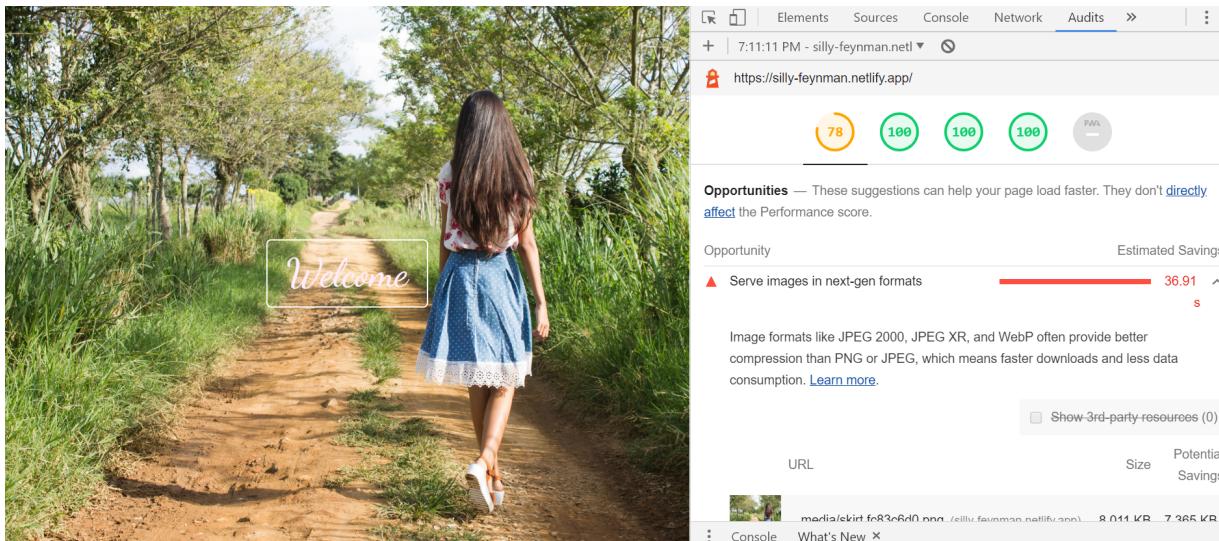


Click on “Generate report”.



## The Problem

If you have a large image in either **.jpg** or **.png** format (the image in the screenshot is 2246 x 1473 pixels in size), it will take a long time to load. As you can see, Performance in Lighthouse is 78%, and it took 36.91 s to load. Lighthouse suggests serving images in next-gen formats.



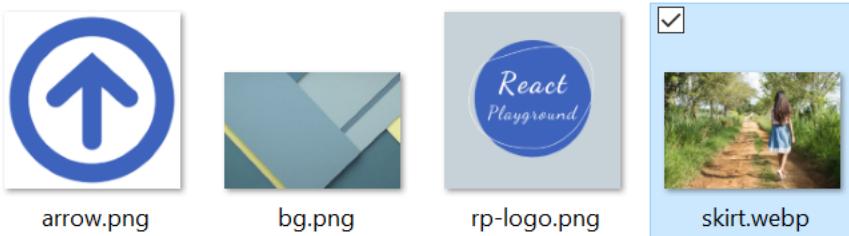
## What To Do

1. First, convert your image from **.jpg/.png** to a next-gen format using an online converter like this one: <https://image.online-convert.com/convert-to-webp>  
In this example, we're using this converter to convert from **.png** to **.webp**.

The screenshot shows the Online-Convert website interface. At the top, there's a navigation bar with links for Home, File formats, Blog, Developers, Login, and Register. Below the navigation is a banner stating "Convert media free, fast and online. No software installation needed." On the left, a sidebar lists various converter categories: Converter, Archive converter, Audio converter, Device Converter, Document converter, Ebook converter, Hash encryption, and Image converter, which is currently selected. Under Image converter, sub-options include Convert To BMP, EPS, GIF, HDR/EXR, ICO, JPG, PNG, SVG, TGA, and TIFF. The main content area features a heading "Convert an image to WebP" with sub-links for AdChoices, resize image, resize photos, and pdf converter. Below this is a section titled "Online image converter" with a brief description of the service. A central green button labeled "Drop Files here" with a cloud icon is prominent. To the right, there are sections for "Bookmark and share page" with social sharing buttons for Like, Share, Tweet, and LinkedIn, and a "SPONSORED SEARCHES" sidebar with links for free image converter, photo size converter, convert jpg to png, animated gif images, and change photo to jpeg.

2. After converting the image into a **.webp** format, put the image into the appropriate folder. In this case, it has been placed in the **img** folder.

PC > Desktop > Web-Projects > react-contact-form > src > img



3. Import the image with the new **.webp** extension (line 3).

```
1 import React from 'react';
2 import { Container, Row, Col } from 'react-bootstrap';
3 import skirt from '../.../img/skirt.webp';
4
5 const Home = () => {
6   return (
7     -- REST OF CODE --
```

4. And that's it. Now it should work.



- The load time should now be faster. And when checking on Lighthouse, the Performance score has improved and is now at 90%. And we no longer get the message that suggests serving images in next-gen formats. And now when the pages on your app load, they should load faster.

Lighthouse Audit Results:

- Performance: 90
- Accessibility: 100
- Best Practices: 100
- SEO: 100

PWA Status: Progressive Web App

Metrics	
First Contentful Paint	2.9 s
Speed Index	3.5 s
Time to Interactive	2.9 s
First Meaningful Paint	2.9 s
First CPU Idle	2.9 s
Max Potential First Input Delay	190 ms

[View Trace](#)