Sample PDF - 5 MB

A size-targeted PDF for upload-limit tests. Photos are embedded as JPEG images; the text is real and selectable.

Performance problems often stay hidden until a large file arrives. A parser that reads a whole document into memory works perfectly with a few kilobytes and fails with a few hundred megabytes. A progress bar that never moves makes a slow upload look like a broken one.

Test with a range of sizes that matches your real limits: something tiny, something typical and something close to the maximum you allow. Measure memory as well as time, and repeat the test on a slow network connection, because mobile users experience your upload flow very differently from developers on office Wi-Fi.

Figure 1

Figure 1. Generated landscape, 2400 × 1600 JPEG.

JPEG remains the workhorse for photographs. It uses lossy compression that throws away detail the eye is unlikely to miss, which keeps files small but means every re-save loses a little quality. PNG is lossless and supports transparency, which makes it the usual choice for screenshots, logos and interface graphics, at the cost of larger files for photographic content.

Figure 2

Figure 2. Generated landscape, 2400 × 1600 JPEG.

A video file has two layers that are easy to confuse. The container, such as MP4, MOV, WebM or MKV, is the box that holds the streams, timing information and metadata. The codec, such as H.264, HEVC, VP9 or AV1, is the method used to compress the pictures inside the box. Two MP4 files can contain completely different codecs, and a player that handles one may refuse the other.

Figure 3

Figure 3. Generated landscape, 2400 × 1600 JPEG.

Digital audio starts as a stream of samples, typically 44,100 or 48,000 per second for each channel. WAV files usually store those samples uncompressed, which makes them large but simple and lossless. MP3 and AAC use perceptual compression to shrink the same audio by a factor of ten or more while keeping it pleasant to listen to.