

JPEG Format

Type: Raster

Main Characteristics:

- Lossy compression
- Widely supported
- Good for photographs

Pros:

- Small file size
- Good quality for photos

Cons:

- Lossy artifacts
- Not suitable for transparency

Best Use: Photographs and complex images

PNG Format

Type: Raster

Main Characteristics:

- Lossless compression
- Supports transparency

Pros:

- High quality
- Transparency support

Cons:

- Larger file sizes than JPEG

Best Use: Logos, icons, images requiring transparency

GIF Format

Type: Raster

Main Characteristics:

- 256-color palette
- Supports animation

Pros:

- Simple animations
- Wide compatibility

Cons:

- Limited color range
- Not suitable for photos

Best Use: Simple animations and small graphics

SVG Format

Type: Vector

Main Characteristics:

- XML-based
- Scalable without quality loss

Pros:

- Scales infinitely
- Small file size for graphics

Cons:

- Not ideal for complex photographic images

Best Use: Logos, icons, illustrations

WebP Format

Type: Raster

Main Characteristics:

- Supports lossy and lossless
- Transparency support

Pros:

- Better compression than JPEG/PNG
- Animation support

Cons:

- Slightly less universal support than JPEG/PNG

Best Use: Modern web images needing small size

AVIF Format

Type: Raster

Main Characteristics:

- Based on AV1 codec
- High compression efficiency

Pros:

- Superior quality at smaller sizes
- HDR support

Cons:

- Growing but not universal support
- Slower encoding

Best Use: High-quality modern web images