

Breaking Up with SVG-in-JS

written version & sources – <u>kurtextrem.de/posts/svg-in-js</u> Jacob Groß | 9th April 2025



Please don't import SVGs as JSX. It's the most expensive form of sprite sheet: costs a minimum of 3x more than other techniques, and hurts both runtime (rendering) performance and memory usage.

This bundle from a popular site is almost 50% SVG icons (250kb), and most are unused.





- Senior Performance Engineer @ Framer (you might know us from "Framer Motion")
- Participant in W3C WebPerfWG calls, if you have webperf topics, come chat ③
- Studied Human-Computer-Interaction (UX) @ LMU Munich

I like making things fast & accessible

What Jason meant we shouldn't do:

- import React, { useState, useEffect, FormEvent } from "react"
 - import type { ComponentType } from "react"

4

import { Eye, EyeSlash } from "phosphor-react"

What happens if you do:

Console Sources Network Per	rformance Memory	Application								
⊡ ● C ⊘ ± + <u>A</u>		🔻 🛛 🗹 Screenshots 🔲 Memory	/ 🚨 業 🔲 Dim 3rd parties							
Insights Annotations (12)	1.000 ms		2.914 ms	4914 ms	5.914 ms 6.914 ms	7.914 ms	8 <u>914 ms</u> 9.914 ms	10.914 ms	12.914 ms	13.914 ms
~/ (LCP INP CLS	(c) −86 ms	914 ms 1,914 ms	2,914 ms 3,914 ms	4,914 ms 5,5	914 ms 6,914 ms	7,914 ms 8,	9.914 ms	10,914 ms 11,914 ms	12,914 ms 1	* * * * * * * * D D D D D D 13,914 ms 14,5
0.64s 947ms 0 Loca 1.28s 149ms 0 (URI	al d L)	▋ <mark><mark>────┤</mark>┝┃┣┡<mark>┝</mark> ┝┠──└┡ ┝<mark>╘</mark>┺──┤ ┝╹^SC───[↑]</mark>	ano		₿₿₿ ₿₿₽₩₽₩₽₩₽₩₽₽₩₽	+ • •	₩ ₩₩ ₩ ₩ ₩ ₩		ዞ ▶ <mark> </mark> - -	colle ₁ ↓ ↓ ↓ ↓ ↓
INP by phase										
LCP by phase	▶ Frames▼ Animations								Anion	
LCP request discovery	▼ Timings									
Render blocking requests	▼ Interactions			ramer-hydratioto-first-pai framer-hydration-render		hh				
Network dependency tree	▶ Performance Time	line — Custom track				`∔ _ !! ∎ ■				
Improve image delivery Est savings: 76.2 kB	► INP — Custom tra ▼ Main —		1335							Fy t Fy t
Optimize DOM size			(anonymous) (anonymous)							(a) () (a) ()
3rd parties			(anonymous) (anonous)							c c () ()
Forced reflow			(anoous) Comde							
► Passed insights (5)			(anus)							



	Input delay 862 ms		Proce 61 ms	
Task Evaluate module	870.13 ms (self 26 μs) Task <u>Long task</u> took 8 7	0.13 ms.	Т	Task Run mas
(as) (anonymou	s)			Qe
Ce (anonymou	s)		(
() (anonymou	s)			
() (anonymou	s)			
() (anous)	(anonymous)			
	(anonymous)			
	(a) (anonymous)			
	(a) Compile code			
	(anonymous)	(anoous)	

a x

1/28.476 🔷 👻 X n a?a(r):(console.error('Unsupported icon weight. Choose from import{D as d,E as I4,a as e,g as J4,j as o,p as _4,r as Q4,z as S4}from"./chunk-OMSSOAQL.mjs";import{g as R4}from"./chunk-3MBL4HDM.mjs";R4();R4();R4();var nL=J4({color:"currentColor",size:"1em",weight:"regular",mirror createElement('thin", "light", "regular", "bold", "fill", or "duotone".'),null};function Y4(t,n}{if(t=null)return{};var r={},k=0bject.keys(t),a,s;for(s=0;s<k.length;s++)a=k[s],n.indexOf(a)≥0||(r[a]=t[a]);return r}var i=o(fun .weight,U4=t.mirrored,q4=t.children,T4=t.renderPath,G4=Y4(t, Linit, 'Light', control transmitter in agreent port is the second of 128",fill:"none",stroke:t,strokeLinecap:"round",strokeLinejoin:"round",strokeWidth:"16"}))});var rL=function(n,r){return e.createELement([i,Object.assign({ref:n},t,{renderPath:rL}))});ol.displayName="Activity";var m=new Map;m.set("bold",function(t){return x:"40",y:"48",width:"192",height:"160",rx:"8",transform:"translate(264 -8) rotate(90)",fill:"none",strokeLinecap:"round",strokeLinejoin:"round",strokeWidth:"24"}),e.<mark>createElement(</mark>"path", d:"M92,167.2a60,60,0,0,1,88,0",fill:"none",stroke:t,strokeLinecap:"round",strokeLinejoin:"round",strokeWidth:"24"}))));m.set("duotone",function(t){return e.<mark>createElement(</mark>e.Fragment,null,e.<mark>createElement(</mark>"circle", x1:"32",y1:"108",x2:"56",y2:"108",fill:"none",strokeLinejoin:"round",strokeWidth:"16"}),e. createlement("line",{x1:"32",y1:"66",x2:"56",y2:"66",fill:"none",strokeLinejoin:"round",strokeWidth:"16"}),e. createlement("line", x1:"32",y1:"148",x2:"56",y2:"148",fill:"none",strokeLinejoin:"round",strokeWidth:"16"}),e.createElement("line",{x1:"32",y1:"188",fill:"none",strokeLinejoin:"round",strokeWidth:"16"}),e.createElement("Poth" {x1:"32",y1:"108",x2:"56",y2:"108",fill:"none",strokeLinejoin:"round",strokeWidth:"12"}),e. createElement("line",{x1:"32",y1:"68",fill:"none",strokeLinejoin:"round",strokeWidth:"12"}),e. createElement("line",{x1:"32",y1:"68",fill:"none",strokeLinejoin:"round",strokeLinejoin:"round",strokeLinejoin:"round",strokeWidth:"12"}),e. createElement("line",{x1:"32",y1:"68",fill:"none",strokeLinejoin:"round",strokeWidth:"12"}),e. createElement("line",{x1:"32",y1:"68",fill:"none",strokeLinejoin:"round",strokeWidth:"12"}),e. createElement("line",{x1:"32",y1:"68",fill:"none",strokeLinejoin:"round",strokeWidth:"12"}),e. createElement("line",{x1:"32",y1:"68",fill:"none",strokeLine;strokeWidth:"12"}),e. createElement("line",{x1:"32",y1:"68",fill:"none",strokeWidth:"12"}),e. createElement("line",{x1:"32",y1:"32"}),e. createElement("line",{x1:"32",y1:"32"}),e. createElement("line",{x1:"32",y1:"32"}),e. createEle (x1:"32",y1:"148",x2:"56",y2:"148",fill:"none",strokeLinejoin:"round",strokeWidth:"12"}),e.</reateElement("line",{x1:"32",y1:"188",fill:"none",strokeLinejoin:"round",strokeWidth:"12"}),e.</reateElement("path", d:"M88,168a60,60,0,0,1,96,0",fill:"none",stroke:t,strokeLinecap:"round",strokeLinejoin:"round",strokeWidth:"12"}),e.createElement("rect",{x:"40",y:"48",width:"192",height:"160",rx:"8",transform:"translate(264 -8) rotate(90)",fill:"none",stroke:t,stroke:t,strokeLinecap:"round",strokeLinejoin:"round",strokeWidth:"12"})); m.set("thin",function(t){return e. createElement("circle", {cx:"136", cy:"112", r:"32", fill:"none", strokeLinecap:"round", strokeLinejoin:"round", strokeWidth:"12"})); m.set("thin",function(t){return e. createElement("circle", {cx:"136", cy:"112", r:"32", fill:"none", stroke:t, strokeLinecap:"round", strokeLinejoin:"round", strokeWidth:"12"})); m.set("thin",function(t){return e. createElement("circle", {cx:"136", cy:"112", r:"32", fill:"none", strokeLinecap:"round", strokeLinejoin:"round", strokeWidth:"12"}); m.set("thin", function(t){return e. createElement("circle", {cx:"136", cy:"112", r:"32", fill:"none", strokeLinecap:"round", strokeLinejoin:"round", strokeWidth:"12"}); m.set("thin", function(t){return e. createElement("circle", {cx:"136", cy:"112", r:"32", fill:"none", strokeLinecap:"round", strokeLinejoin:"round", strokeWidth:"12"}); m.set("thin", function(t){return e. createElement("circle", {cx:"136", cy:"112", r:"32", fill:"none", strokeLinecap:"round", strokeLinejoin:"round", strokeWidth:"12"}); m.set("thin", function(t){return e. createElement("circle", {cx:"136", cy:"112", r:"32", fill:"none", strokeLinecap:"round", strokeWidth:"12"}); m.set("thin", function(t){return e. createElement("circle", {cx:"136", cy:"12", r:"32", fill:"none", strokeLinecap:"round", strokeLinecap:"round", strokeLinecap:"round", strokeWidth:"12"}); m.set("thin", function(t){round", strokeLinecap:"round", strokeLinec x1:"32",y1:"108",x2:"56",y2:"108",fill:"none",stroke:t,strokeLinecap:"round",strokeLinejoin:"round",strokeWidth:"8"}),e.<mark>createElement</mark> ("line",{x1:"32",y1:"68",x2:"56",y2:"68",fill:"none",stroke:t,strokeLinecap:"round",strokeLinejoin:"round",strokeWidth:"8"}),e.createElement("line", x1:"32",y1:"148",x2:"56",y2:"148",fill:"none",stroke:t,strokeLinecap:"round",strokeLinejoin:"round",strokeWidth:"8"}),e.<mark>createElement</mark> ("line",{x1:"32",y1:"188",x2:"56",y2:"188",fill:"none",stroke:t,strokeLinecap:"round",strokeLinejoin:"round",strokeWidth:"8"}),e.<mark>createElement(</mark>"path", (d: "M88,168a60,60,0,0,1,96,00",fill:"none",stroke:t,strokeLinecap:"round",strokeLinejoin:"round",strokeWidth:"8"}),e. createElement("rect",{x:"40",y:"48",width:"192",height:"160",rx:"8",transform:"translate(264 -8) rotate(90)",fill:"none",stroke:t,strokeLinecap:"round",strokeWidth:"8"}))});m.set("regular",function(t){return e.createElement("circle",{cx:"136",cy:"112",r:"32",fill:"none",stroke:t,strokeLinecap:"round",strokeWidth:"16"}),e. createElement("circle",{cx:"136",cy:"112",r:"32",fill:"none",stroke:t,strokeLinecap:"round",strokeWidth:"16"}),e. createElement("circle",{cx:"136",cy:"112",r:"32",fill:"none",stroke:t,strokeLinecap:"round",strokeWidth:"16"}),e. createElement("circle",{cx:"136",cy:"112",r:"32",fill:"none",stroke:t,strokeLinecap:"round",strokeWidth:"16"}),e. createElement("circle",{cx:"136",cy:"112",r:"32",fill:"none",stroke:t,strokeLinecap:"round",strokeWidth:"16"}),e. createElement("circle",{cx:"136",cy:"112",r:"32",fill:"none",stroke:t,strokeLinecap:"round",strokeWidth:"16"}),e. createElement("circle",{cx:"112",r:"32",fill:"none",stroke:t,strokeLinecap:"round",strokeWidth:"16"}),e. createElement("circle",{cx:"112",r:"32",fill:"none",stroke:t,strokeLinecap:"round",strokeLinecap:"round",strokeWidth:"16"}),e. createElement("circle",{cx:"112",r:"32",fill:"none",stroke:t,strokeLinecap:"round",strokeLinecap:"round",strokeWidth:"16"}),e. createElement("circle",{cx:"112",r:"32",fill:"none",stroke:t,strokeLinecap:"round",strokeLinecap:"round",strokeWidth:"16"}),e. createElement("circle",{cx:"112",r:"32",fill:"none",stroke:t,strokeLinecap:"round",strokeLinecap:"round",strokeWidth:"16"}),e. createElement("circle",{cx:"136",cy:"112",r:"32",fill:"none",stroke:t,strokeLinecap:"round",stroke [x1:"32",y1:"108",x2:"56",y2:"108",fill:"none",strokelinejoin:"round",strokeWidth:"16"}),e. createElement("line",{x1:"32",y1:"68",fill:"none",strokeLinejoin:"round",strokeWidth:"16"}),e. createElement("line", x1:"32",y1:"148",x2:"56",y2:"148",fill:"none",strokeLinejoin:"round",strokeWidth:"16"}),e.createElement("line",{x1:"32",y1:"188",fill:"none",strokeLinejoin:"round",strokeWidth:"16"}),e.createElement("path" //i'''M88,/66a.60,60,60,60,60,60,60,60,60,60,60,60,60,7,50000*,fill:"none",strokeLinecap:"round",strokeLinejoin:"round",strokeWidth:"16"})); var il=function(n,r){return l(n,r,m)}, lL=o(function(t,n){return e.createElement("rect",{x:"40",y:"48",width:"192",height:"160",function(t){return e.createElement("rect",{x:"8,round",strokeLinejoin:"round",strokeWidth:"16"}))}); var 409/48a24,24,00,0,1,48,0096180,400/321-80-160/32L168,2200/322",fill:"none",strokeLinecap:"round",strokeWidth:"24"}))}); h.set("duotone",function(t){return e.createElement(e.Fragment,null,e.createElement("path",{d:"M128,216,88,232/200116-16/152L24,168/136180-40/48a24,24,00,0,1,48,00/96180,400/321-80-160/32L168,220/200116-16/152L24,168/136180-40/48a24,24,00,0,1,48,00/96180,400/321-80-160/32L168,220/200116-16/152L24,168/136180-40/48a24,24,00,0,1,48,00/96180,400/321-80-160/32L168,220/200116-16/152L24,168/136180-40/48a24,24,00,0,1,48,00/96180,400/321-80-160/32L168,220/200116-16/152L24,168/136180-40/48a24,24,00,0,1,48,00/96180,400/321-80-160/32L168,220/200116-16/152L24,168/136180-40/48a24,24,00,0,1,48,00/96180,400/321-80-160/32L168,220/200116-16/152L24,168/136180-40/48a24,24,00,0,1,48,00/96180,400/321-80-160/32L168,220/200116-16/152L24,168/136180-40/48a24,24,00,0,1,48,00/96180,400/321-80-160/32L168,220/200116-16/152L24,168/136180-40/48a24,24,00,0,1,48,00/96180,400/321-80-160/32L168,220/200116-16/152L24,168/136180-40/48a24,24,00,0,1,48,00/96180,400/321-80-160/32L168,210/32L164,210/380-40/48a24,24,00,0,1,48,00/96180,400/321-80-160/32L168,210/380-40/48a24,24,00,0,1,48,00/96180,400/321-80-160/32L168,210/380-160/32L164,210/380-160/380-160/380-160/32L164,210/380-160/380-160/380aprior advised: 40x321.68, 40x322 *, fill: "none", strokeLine; public, strokeLine; public, strokeLine; public, *, foreitelement[*, foreitel 16v321168/200v322"/fill:"none",stroke_t,strokeLinecap:"round",strokeLinejoin:"round",strokeWidth:"16"})));var aL=function(1,n){return e. createELement(i,0bject.assign({ref.n},t,{renderPath:aL})));sL.dispLayName="Airplane",var p=new Map;p.set("bold",function(t){return sreateElement(e.Fragment,null,e.createElement("line",{x1: "72",y1:"216",x2:"216",y2:"216",fill:"none",strokeLinejoin:"round",strokeLine;st 22.8L19.1,90.3A8,8,0,0,1,26.8,082",fill:"none",strokei 4V136A36,36,0,0,0,208,1002"}))});p.set("light",function(t){return e.createElement("line",{x1:"72",y1:"216",x2:"216",fill:"none",strokeLinecap:"round",strokeLinejoin:"round",strokeWidth:"12"}),e.createElement("path", tx1: "2: y1: "21: y2: "21 [x1:"72",y1:"216",x2:"216",y2:"216",j11:"none",strokeLinecap:"round",strokeLinejoin:"round",strokeWidth:"8"]),e. createElement("path",{d:"M26.8,80H44120,24H96L83.5,66.5A8,8,0,0,1,91.1,56H108144,48h56a32,32,0,0,1,32,32v24H63.8a32,32,0,0,1-30.6-5,9.7V82.6L66.8,74.7,51.5,46.1a4.1,4.1,0,0,0-2.2-1.9L35.8,39.7A11.9,11.9,0,0,0,25,41.4a11.6,11.6,0,0,0-5,9.7V52.6a36.1,36.1,0,0,0,25,49.52"})));f.set("light",function(t){return e.createElement(e.Fragment,null,e.createElement("line", [x1:"96",y1:"216",x2:"240",y2:"216",fill:"none",strokeLinecap:"round",strokeLinejoin:"round",strokeWidth:"12"}),e.createElement("path",{d:"M24,103.7V51.1a8,8,0,0,1,10.5-7.6L48,48,64,78,96,88V51.1a8,8,0,0,1,10.5-7.6L48,48,64,78,96,88V51.1a8,8,0,0,1,10.5-7.6L48,48,64,78,96,88V51.1a8,8,0,0,1,10.5-7.6L48,48,64,78,96,88V51.1a8,8,0,0,1,10.5-7.6L48,48,64,78,96,88V51.1a8,8,0,0,1,10.5-7.6L48,48,64,78,96,88V51.1a8,8,0,0,1,10.5-7.6L48,48,64,78,96,88V51.1a8,8,0,0,1,10.5-7.6L48,48,64,78,96,88V51.1a8,8,0,0,1,10.5-7.6L48,48,64,78,96,88V51.1a8,8,0,0,1,10.5-7.6L48,48,64,78,96,88V51.1a8,8,0,0,1,10.5-7.6L48,48,64,78,96,88V51.1a8,8,0,0,1,10.5-7.6L48,48,64,78,96,88V51.1a8,8,0,0,1,10.5-7.6 .6L120,48132,56,48.6,13.5A31.9,31.9,0,0,1,224,148.3V184L47.4,134.5A31.9,31.9,0,0,1,24,103.72",fill:"none",strokeLinejoin:"round",strokeWidth:"12"})));f.set("thin",function(t){return e.createElement("line", [x1:"96",y1:"216",x2:"240",y2:"216",fill:"none",strokeLinecap:"round",strokeLinejoin:"round",strokeWidth:"8"}),e.

<u>createElement("</u>path",{d:"M24,183.7V51.1a8,8,0,0,1,18.5-7.6L48,48,64,78,96,88V51.1a8,8,0,0,1,10.5-7.6L48,48,64,78,96,88V51.1a8,8,0,0,1,10.5-7.6L48,48,64,78,96,88V51.1a8,8,0,0,1,10.5-7.6L48,48,64,78,96,88V51.1a8,8,0,0,1,10.5-7.6L48,48,64,78,96,88V51.1a8,8,0,0,1,10.5-7.6L48,48,64,78,96,88V51.1a8,8,0,0,1,10.5-7.6L48,48,64,78,96,88V51.1a8,8,0,0,1,10.5-7.6L48,48,64,78,96,78V51.1a8,7 7.6L120,40132,56,40.6,13.5A31.9,31.9,0,0,1,224,148.3V184L47.4,134.5A31.9,31.9,0,0,1,24,103.7Z",fill:"none",strokeLinecap:"round",strokeLinejoin:"round",strokeWidth:"8"}))});f.set("regular",function(t){return e.createElement([e.Fragment,null,e.createElement("line", {x1:"96",y1:"216",x2:"240",y2:"216",fill:"none",stroke:t,strokeLinejoin:"round",strokeWidth:"16"}),e.createElement("path",{d:"M24,103.7V51.1a8,8,0,0,1,10.5-7.6L48,48,64,78,96,88V51.1a8,8,0,0,1,10.5-7.6L48,48,64,78,96,88V51.1a8,8,0,0,1,10.5-7.6L48,48,64,78,96,88V51.1a8,8,0,0,1,10.5-7.6L48,48,64,78,96,88V51.1a8,8,0,0,1,10.5-7.6L48,48,64,78,96,88V51.1a8,8,0,0,1,10.5-7.6L48,48,64,78,96,88V51.1a8,8,0,0,1,10.5-7.6L48,48,64,78,96,88V51.1a8,8,0,0,1,10.5-7.6L48,48,64,78,96,88V51.1a8,8,0,0,1,10.5-7.6L48,48,64,78,96,88V51.1a8,8,0,0,1,10.5-7.6L48,48,64,78,96,88V51.1a8,8,0,0,1,10.5-7.6L48,48,64,78,96,88V51.1a8,8,0,0,1,10.5-7.6L48,48,64,78,96,88V51.1a8,8,0,0,1,10.5-7.6L48,48,64,78,96,88V51.1a8,8,0,0,1,10.5-7.6L48,48,64,78,96,88V51.1a8,8,0,0,1,10.5-7.6L48,48,64,78,96,88V51.1a8,8,0,0,1,10.5-7.6L48,48,64,78,96,88V51.1a8,8,0,0,1,10.5-7.6L48,48,64,78,96,88V51.1a8,8,0,0,1,10.5-7.6L48,48,64,78,96,88V51.1a8,8,0,0,0,1,10.5-7.6L48,48,64,78,96,88V51.1a8,8,0,0,0,1,10.5-e.<mark>createElement(</mark>e.Fragment,null,e.c<mark>reateElement(</mark>"path",{d:"M16.9,140.4137.7,35.3a32,32,0,0,0,0,38,4.3L244,92,225.4,69.2a32,32,<u>0,0,0-41-7.3L</u>140,88,80,0,0,0-2.2,13.3L92,116,64,132,36,1201-16.8,7.2A8,8,0,0,0,0.16.9,140.42",opacity:"0.2"}),e.createElement("uline", call better main(), incl.(=) better comment() path (=), incl.(=), incl. e. CreateElement(e. Fragment, null, e. CreateElement("line", {x1: "24", y1: "216", x2: "168", y2: "216", fil: "none", strokeLinejoin: "round", strokeWidth: "12"}), e. CreateElement("path", {x1: "24", y1: "21", x2: "168", y2: "216", fil: "none", strokeLinejoin: "round", strokeWidth: "12"})); e. Set("thin", function(t){return e. CreateElement("path", {x1: "24", y1: "21", x2: "168", y2: "216", fil: "none", strokeLinejoin: "round", strokeWidth: "12"})); e. Set("thin", function(t){return e. CreateElement("path", {x1: "24", y1: "21", x2: "168", y2: "216", fil: "none", strokeLinejoin: "round", strokeWidth: "12"})); e. Set("thin", function(t){return e. CreateElement("path", {x1: "24", y1: "21", y2: "168", y2: "216", fil: "none", strokeLinejoin: "round", strokeWidth: "12"})); e. Set("thin", function(t){return e. CreateElement("line", {x1: "24", y1: "21", y2: "168", 16.8,7.2A8,8,8,0,0,0,16.9,140.42",fill:"none",stroke:t,strokeLinecap:"round",strokeLinejoin:"round",strokeWidth:"8"}))});E.set("regular",function(t){return e.createElement(e.Fragment,null,e.createElement("line",

📵 🕁 🛛 🥐 🖸 🏳 🛛 🚓 <> 🛛 🔂 Inkognito (2) 🛛 Update abschließer

nt("path",{d:"M160,216h-.4a8.1,8.1,0,0,1-7.1

ent("polyline",{points:"24

X _n a?a(r):(console.error('Unsupported icon weight. Choose from

"rect",{width:"256",height:"256",fill:"none"}),T4(s??\$4,k??

e.Fragment.null.e.

("polyline", {points: "24 128 56 128 96 40 160 208 200 128 232

keLinejoin:"round".strokeWidth:"24"}))}):L.set("duotone".function(t){return

ragment, null.e.c

("line"

("line",

port{D as d,E as I4,a as e,g as J4,j as o,p as _4,r as Q4,z as S4}from"./chunk-OMSSDAQL.mjs";import{g as R4}from"./chunk-3MBL4HDM.mjs";R4();R4();var nL=J4({color:"currentColor",size:"1em",weight:"regular",mirror createElement("size", "weight", "mirrored", "children", "renderPath"]),u=_4(nL),B4=u.color.c=B4==void 0?"currentColor":B4,C4=u.weight,\$4=D4==void 0?"regular":D4,X4=u.mirrored,eL=X4==void 08&X4.tL=Y4(u,["color","size","weight","mirrored",]);return "svg",Object.assign({ref:n,xmlns:"http://www.w3.org/2000/svg",width:a??C4,height:a??C4,fill:k??c,viewBox:"0 0 256 256",transform:U4||eL?"scale(-1, 1)":void 0},tL,G4),!!r&&e.e);i.displayName="IconBase";var L=new Map;L.set("bold",function(t){return e.c (e.Fragment, null, e.create ("polyline", {points:"24 128 56 128 96 40 160 208 200 128 232 128",fill e.Fragment.null.e.createB 忧 polyline",{points:"24 128 56 128 96 40 160 208 200 128 232 128",fill:"none",stroke:t,strokeLinecap:"round",strokeLinejoin:"round",strokeWidth:"16"}))};L.set("fill",function(){return e .8,63.3,131.3A8.8.0.0,1.56,136H24a8.8,0,0,1.05,136H24a8.8,0,0,1.96,3,32a8.8,0,0,1.96,3,32a8.8,0,0,1.7,2,5,2L161.188,1L31.8-63.7A8.2,8,2,0,0,1,200,120H32a8.8,0,0,1,0,16H204,9L-37,7,75,6A8.2,8,2,0,0,1,160,216Z"})));L,set("light", function(t){return e. 198 200 128 232 128",fill:"none",stroke:t,strokeLinecap:"round",strokeLinejoin:"round",strokeWidth:"12"}))});L.set("thin",function(t){return e.c e.Fragment.null.e. ake:t.strokelinecap:"round".strokelinejoin:"round",strokeWidth:"16"}))});var rL=function(n,r}{return l(n,r,L)},oL=o(function(t,n){return e. i,Object.assign({ref:n},t,{renderPath:rL}))};oL.displayName="Activity";var m=new Map;m.set("bold",function(t){return circle".{cx:"136".cy:"116".r:"32".fill:"none".stroke:t.strokeLinecap:"round".strokeLinejoin:"round".strokeWidth:"24"}).e 'line",{x1:"32",y1:"68",x2:"56",y2:"68",fill:"none",stroke:t,strokeLinecap:"round",strokeLinejoin:"round",strokeWidth:"24"}),e.<mark>createElement</mark> 1:"32",y1:"148",x2:"56",y2:"148",fill:"none",stroke:t,strokeLinecap:"round",strokeLinejoin:"round",strokeWidth:"24"}),e. line",{x1:"32",y1:"188",x2:"56",y2:"188",fill:"none",stroke:t,strokeLinecap:"round",strokeLinejoin:"round",strokeWidth:"24"}),e.<mark>createElement(</mark>"rect" ."40",y:"48",width:"192",height:"160",rx:"8",transform:"translate(264 -8) rotate(90)",fill:"none",stroke:t,strokeLinecap:"round",strokeLinejoin:"round",strokeWidth:"24"}),e.o "M92,167.2a60,60,0,0,1,88,0",fill:"none",stroke:t,strokeLinecap:"round",strokeLinejoin:"round",strokeWidth:"24"}))});m.set("duotone",function(t){return e.c e.Fragment.null.e. x:"136".cy:"112".r:"32".fill:"none",stroke:t,strokeLinecap:"round",strokeLinejoin:"round",strokeWidth:"16"}),e.c "path",{d:"M208,32H64a8,8,0,0,0-8,8V216a8,8,0,0,0,8,8H208a8,8,0,0,0,8-8V40A8,8,0,0,0,208,32ZM136,144a32,32,0,1,1,32-32A32,32,0,0,1,136,144Z",opacity:"0.2"}),e.createElement("line", 1:"32",y1:"108",x2:"56",y2:"108",fill:"none",stroke:t,strokeLinecap:"round",strokeLinejoin:"round",strokeWidth:"16"}) "line",{x1:"32",y1:"68",x2:"56",y2:"68",fill:"none",stroke:t,strokeLinecap:"round",strokeLinejoin:"round",strokeWidth:"16"}),e.<mark>createElemen</mark> <l: "32",y1:"148",x2:"56",y2:"148",fill:"none",stroke:t,strokeLinecap:"round",strokeLinejoin:"round",strokeWidth:"16"}),e.</pre> "line",{x1:"32",y1:"188",x2:"56",y2:"188",fill:"none",stroke:t,strokeLinecap:"round",strokeLinejoin:"round",strokeWidth:"16"}),e.createElement("path" ("rect",{x:"40",y:"48",width:"192",height:"160",rx:"8",transform:"translate(264 -8) :"M88 168a60 60 0 0 1 96 0" fill:"none" stroke:t strokelinecan:"round" strokelinejoin:"round" strokeWidth:"16"}) e.createFlement Fill:"none",stroke:t,strokeLinecap:"round",strokeLinejoin:"round",strokeWidth:"16"}))});m.set("fill",function(){return e. (e.Fragment,null,e.createE)

("path", {d: "M160,112a24,24,0,1,1-24-24A24.1,24.1,0,0,1,160,112Zm64-72V216a16,16,0,0,1-16,16H64a16,16,0,0,1-16-16V196H32a8,8,0,0,1,0-2,52,52,0,0,1,83.2,0,8.1,8.1,0,0,0,11.2,1.6A8,8,0,0,0,**190.4,163.2Z"}))});m.set("light",function(t){return e.<mark>createE</mark>** (e.Fragment,null,e.createElement("circle",{cx:"136",cy:"112",r:"32",fill:"none",stroke:t,strokeLinecap:"round",strokeLinejoin:"round",strokeWidth:"12"}),e.createElement("line", '108",x2:"56",y2:"108",fill:"none",stroke:t,strokeLinecap:"round",strokeLinejoin:"round",strokeWidth:"12"}),e.<mark>c</mark> ("line",{x1:"32",y1:"68",x2:"56",y2:"68",fill:"none",stroke:t,strokeLinecap:"round",strokeLinejoin:"round",strokeWidth:"12"}),e.createElement ("line" reateFlemen 148",x2:"56",y2:"148",fill:"none",stroke:t,strokeLinecap:"round",strokeLinejoin:"round",strokeWidth:"12"}),e. eateElement("line",{x1:"32",y1:"188",x2:"56",y2:"188",fill:"none",stroke:t,strokeLinecap:"round",strokeLinejoin:"round",strokeWidth:"12"}),e.c reateElement("path", "M88,168a60,60,0,0,1,96,0",fill:"none",stroke tate(90)".fill:"none".stroke:t.strokeLinecap:

/1:"96", y1:"216", x2:"240", y2:"216", fill:"none", strokeLinecap:"round", strokeLinejoin:"round", strokeWidth:"16"}), e. createElement("path", {d: "M24,103.7V51.1a8,8,0,0,1,10.5-7.6L48,48,64,78,96,88V51.1a8,8,0,0,1,10.5-7.6L48,48,64,78,96,88V51.1a8,8,0,0,1,10.5-7.6L48,48,64,78,96,88V51.1a8,8,0,0,1,10.5-7.6L48,48,64,78,96,88V51.1a8,8,0,0,1,10.5-7.6L48,48,64,78,96,88V51.1a8,8,0,0,1,10.5-7.6L48,48,64,78,96,88V51.1a8,8,0,0,1,10.5-7.6L48,48,64,78,96,88V51.1a8,8,0,0,1,10.5-7.6L48,48,64,78,96,88V51.1a8,8,0,0,1,10.5-7.6L48,48,64,78,96,88V51.1a8,8,0,0,1,10.5-7.6L48,48,64,78,96,88V51.1a8,78,0,0,1,10.5-7.6L48,48,64,78,96,88V51.1a8,78,0,0,1,10.5-7.6L48,48,64,78,96,88V51.1a8,78,0,0,1,10.5-7.6L48,48,64,78,96,88

5.8,7.248,8,8,8,8,9,16.9,148.42",fill:"none",strokeLinecap:"round",strokeLinejoin:"round",strokeWidth:"8"})));E.set("regular",function(t){return e.createElement(e.Fragment,null,e.createElement("line",

61128,48132,56,48.6,13.5A31.9,31.9,8,0,1,224,148.3V184L47.4,134.5A31.9,31.9,0,0,1,24,103.7Z",fill:"none",strokeLinecap:"round",strokeLinejoin:"round",strokeLine

116,64,132,36,1201-16.8,7.2A8,8,8,8,8,8,8,9,9,148.42",fill:"none",strokeLinecap:"round",strokeLinejoin:"round",strokeWidth:"12"})));E.set("thin",function(t){return e.createElement(e.Fragment,null,e.createElement("line",

.61.128,481.32,56,48.6,13.5A31.9,31.9,8,0,1,224,148.3V184L47.4,134.5A31.9,31.9,0,0,1,24,103.7Z",fill:"none",strokeLinejoin:"round",stroke renderPath:dL}))}):uL.displayName="AirplaneLanding";var E=new Map;E.set("bold",function(t){return e.createElement("line",{x1:"24",y1:"216",x2:"168",y2:"216",fill:"none",strokeLinecap:"round",strokeLinejoin:"round",strokeWidth:"24"}),e.createElement("line",{x1:"24",y1:"216",x2:"168",y2:"216",fill:"none",strokeLinecap:"round",strokeLinejoin:"round",strokeWidth:"24"}) :"M16.9,140.4137.7,35.3a32,32,0,0,0,0,38,4.3L244,92,225.4,69.2a32,32,0,0,0-41-7.3L140,88,80,68,63.5,75.1a8,8,0,0,0,16.9,140.4Z",fill:"none",strokeLinecap:"round",strokeLinejoin:"round

: "24", y1: "216", x2: "168", y2: "216", fill: "none", strokeLinecap: "round", strokeLinejoin: "round", stroke

1: "24", y1: "216", x2: "168", y2: "216", fill: "none", stroke:t, stroke:t, stroke:t, strokeline; "round", strokeWidth: "8"}), e. createElement("path", {d: "M16.9, 140.4137.7, 35.3832, 32,0,0,0,0,-41-7.3L140, 88, 80, 68, 63.5, 75.1a8, 8, 9, 0, 0-2.2, 13.3L92, 116, 64, 132, 36, 1201.

("path", {d:"M16.9,140.4137.7,35.3a32,32,0,0,0,38,4.3L244,92,225.4,69.2a32,32,0,0,0-41-7.3L140,88,80,68,63.5,75.1a8,8,0,0,0-2.2,13.3L92,116,64,132,36,1201-16.8,7.2A8,8,0,0,0,16.9,140.4Z", opacity:"0.2"}),e. createElement("line",

.8.7.2A8,8.0.0.16.9.140.42", fill: "none", stroke: t, strokeLinecap: "round", strokeLinejoin: "r

("line",{x1:"24",y1:"216",x2:"168",y2:"216",fill:"none",strokeLinecap:"round",strokeLinejoin:"round",strokeWidth:"12"}),e.createElement("path",{d:"M16.9,140.4137.7,35.3a32,32,0,0,0,38,4.3L244,92,225.4,69.2a32,32,0,0,0+41-7.3L140,88,80,68,63.5,75.1a8,8,0,0,0+

1:"32",y1:"108",x2:"56",y2:"108",fill:"none",s 1:"32",y1:"148",x2:"56",y2:"148",fill:"none",s :"M88,168a60,60,0,0,1,96,0",fill:"none",stroke tate(90)",fill:"none",stroke:t,strokeLinecap:' 1:"32".v1:"108".x2:"56".v2:"108".fill:"none".s 1:"32",y1:"148",x2:"56",y2:"148",fill:"none",s :"M88,168a60,60,0,0,1,96,0",fill:"none",stroke _=function(n,r){return l(n,r,m)},lL=o(function(0V48a24,24,0,0,1,48,0V96l80,40v32l-80-16v32L168 (e.Fragment, null, e.c .4,14A7.9,7.9,0,0,1,16,168V136a8.2,8.2,0,0,1

5v32L168.200v32Z".fill:"none".stroke:t.strokeL 5v32L168,200v32Z",fill:"none",stroke:t,strokeLi v32L168,200v32Z",fill:"none",stroke:t,strokeLi

e.Fragment,null,e.<mark>createElem</mark>

e.Fragment,null,e.<mark>create</mark>



"title",null,r),q4,e.

stroke:t.strokeLinecap

'polyline",{points:"24 128 56 128 96 40 160 208 200 128 232

("circle"

"line"

("path"

Excursion: It's always those damn barrel files.

Speeding up the JavaScript ecosystem - The barrel file debacle



written by <u>@marvinh.dev</u> 08 October 2023

P.S.:

In case you're curious - <u>Next.js/Turbopack</u> includes optimizations for some packages for that reason.

Blame	1517 lines (1516 loc) · 51 KB
	ERATED FILE */
export	<pre>type { Icon, IconProps, IconWeight } from "./lib";</pre>
export	<pre>{ IconContext, IconBase } from "./lib";</pre>
export	* as SSR from "./ssr";
export	* from "./csr/Acorn";
export	* from "./csr/AddressBook";
export	* from "./csr/AddressBookTabs";
export	* from "./csr/AirTrafficControl";
export	* from "./csr/Airplane";
export	<pre>* from ./csr/AirplaneInFlight; * form " /org/himplaneLondin=".</pre>
export	<pre>* from "./csr/Airplanetanoing; * from "./csr/Airplanetakoeff";</pre>
ovport	* from " /csr/AirplaneTaxiing":
ovport	* from " /csn/AinplaneTilt":
ovport	* from " /csr/Airplanetitt",
export	* from " /csr/Alarm".
export	* from " /csr/Alien".
export	* from "./csr/AlignBottom":
export	* from "./csr/AlignBottomSimple":
export	<pre>* from "./csr/AlignCenterHorizontal":</pre>
export	<pre>* from "./csr/AlignCenterHorizontalSimple":</pre>
export	<pre>* from "./csr/AlignCenterVertical";</pre>
export	<pre>* from "./csr/AlignCenterVerticalSimple";</pre>
export	<pre>* from "./csr/AlignLeft";</pre>
export	<pre>* from "./csr/AlignLeftSimple";</pre>
export	<pre>* from "./csr/AlignRight";</pre>
export	<pre>* from "./csr/AlignRightSimple";</pre>
export	<pre>* from "./csr/AlignTop";</pre>
export	<pre>* from "./csr/AlignTopSimple";</pre>
export	<pre>* from "./csr/AmazonLogo";</pre>
export	<pre>* from "./csr/Ambulance";</pre>
export	<pre>* from "./csr/Anchor";</pre>
export	<pre>* from "./csr/AnchorSimple";</pre>
export	<pre>* from "./csr/AndroidLogo";</pre>
export	<pre>* from "./csr/Angle";</pre>
export	<pre>* from "./csr/AngularLogo";</pre>
export	<pre>* from "./csr/Aperture";</pre>
export	<pre>* from "./csr/AppStoreLogo";</pre>
export	* from "./csr/AppWindow";
export	* from "./csr/AppleLogo";
export	<pre>* from "./csr/ApplePodcastsLogo"; * from "./csr/ApplePodcastsLogo";</pre>
export	* from "./csr/ApproximateEquals";
export	* from ./csr/Archive;
export	* from " /csr/ArnowArcloft":
export	* from "/csr/ArrowArcLeft"
export	* from "/csr/ArrowRendDoubleInLeft"
export	* from "./csr/ArrowBendDoub]ellnRight":
export	* from "./csr/ArrowBendDownleft":
export	* from "./csr/ArrowBendDownRight":
export	* from "./csr/ArrowBendLeftDown":
export	* from " /csr/ArrowBendleftIn":
	Blame /* GENU export

54 export * from "./csr/ArrowBendRightDown":

Tree-shaking: Impossible

Code	Blame 20 lines (18 loc) · 6.13 KB
1	/* GENERATED FILE */
2	<pre>import React, { forwardRef } from "react";</pre>
	<pre>import type { Icon } from "/lib/types";</pre>
4	<pre>import IconBase from "/lib/IconBase";</pre>
5	<pre>import weights from "/defs/Acorn";</pre>
6	
7	/**
8	* @regular ![img](
9	* @thin ![img](
10	* @light ![img](
11	* @bold ![img](
12	* @fill ![img](
13	* @duotone ![img](
14	*/
15	const I: Icon = forwardRef(props, ref) => (
16	<pre><iconbase ref="{ref}" weights="{weights}" {props}=""></iconbase></pre>
17));
18	
19	I.displayName = "Acorn";
20	export { I as Acorn };



But maybe no one has such a slow device?



https://infrequently.org/2024/01/performance-inequality-gap-2024/

The web should be equal for everyone

- Mobile devices can be slooooow in
- iPhone 16 Pro != avg. users' device (unless you're in a special field)
- Avg. Android device != avg. developing country device
- Galaxy A51 for 240€ from 2021 is the avg. device Sounds recent?



https://infrequently.org/2024/01/performance-inequality-gap-2024/



Worker Thread Worker Thread Main Thread

Done in "background"



Anything here impacts UX directly Nothing else can run meanwhile.



HTML parser finds JS



Anything here impacts UX directly Nothing else can run meanwhile.



For most frameworks, hydration follows execution, too.



Time until something meaningful happens on user interaction (think hamburger menu)

JavaScript is always blocking *when executed*

- attributes like async/defer don't change that
- link rel="modulepreload" @ServiceWorker caching only moves when parse + compile happens (to right after download)
- Inlined JS always blocks the parser until parsing, compilation and execution is done
- Inlined JS cannot be <u>byte cached</u>
- Be careful of what you inline, especially for JS

How engines (V8) treat JS – Nits

- How truly parallel parsing & compilation is, depends on the number of cores the devices CPU has and how many scripts are loading
- ESM: top-level imports execute <u>synchronously</u> now we know why importing from a barrel file is so slow
- More files = more overhead, especially for small ones
 - HTTP headers can get bigger than the file content
 - V8: disables byte cache if below the <u>1 kb threshold</u>

How engines (V8) treat JS – Byte Cache



"On Android, this optimization also translates to a 1–2% reduction in the toplevel page-load metrics like the time a webpage takes to become interactive."

How engines (V8) treat JS – Summary

- A busy background (CPU) can also impact the main thread implicitly your website is likely not the only thing running
- Not only slow, but can cause bad INP if a user clicks somewhere meanwhile

Your users are waiting for all those reasons. Sometimes they might experience bad INP. Sometimes it's just nothing happens for a while.

How engines (V8) treat JS – Summary

"Byte-for-byte, JavaScript is **more expensive** for the browser to process **than** the **equivalently** sized **image** or Web Font" – Tom Dale, <u>web.dev</u>

SVGs are HTML-like XML tags that describe images. I don't think anyone wants (jpeg/png) images in their JS. ... all of the strings also live in the JS memory heap – which is limited on cheap phones

So, what do we do about SVGs?

Moving SVGs out of JS

Moving SVGs out of JS



1. Good ol' tag

Webpack:

const config	= {							
// … other	parts	of	the	Webpack	config			
<pre>module: {</pre>								
rules: [
{								
test: ∧.svg/,								
<pre>type: "asset/resource",</pre>								
},								
],								
},								
};								

Astro: No config needed! *****

Usage:

import HeartIcon from "./HeartIcon.svg";

const App = () \Rightarrow ;

Don't forget to turn on Gzip / Brotli compression for .svg files on your CDN/server.

1. Good ol' tag

Pro's:

- You can use attributes
 like loading="lazy" &
 fetchpriority="high" if it's important
- Keeps DOM complexity simple just 1 DOM node
- Most performant option of all
- SVG animations on DPR > 1x screens might consume less CPU compared to an inline SVG

Con's:

Needs workaround for <u>currentcolor</u> and custom props:

They don't inherit values from the current page (the SVG file is treated as an external resource and not as part of the DOM)

- Chromium: SVG animations run capped to 60
 Hz and use more CPU on DPR = 1x screens
- <a> tags embedded in the SVG can't be clicked

2. But how can I <use> more colors?

Make it part of the DOM, by using <use>

import HeartIcon from "./HeartIcon.svg";

const App = () ⇒ <svg><use href={`\${HeartIcon #heart`} /></svg>;

• Must reference an ID, so the file might look like this:

<svg viewBox="0 0 300 300" id="heart">...</svg>

Now you can just use **currentcolor** & CSS props again.

The return of the sprites

- SVG sprites are an option to combine many icons into one file
- This can make sense if you load 100 1kb files the overhead of HTTP headers then might be bigger than the svg itself
- ... but using just 1 icon out of a 100 kb file is less reasonable

The return of the sprites

- SVG sprites are an option to combine many icons into one file
- This can make sense if you load 100 1kb files the overhead of HTTP headers then might be bigger than the svg itself
- ... but using just 1 icon out of a 100 kb file is less reasonable

Usage is simple:

<svg><use href="icons.svg#icon1" /></svg>
<svg><use href="icons.svg#icon2" /></svg>

<use>con's:

- -<use> can only load from same-site more on that soon
- -<mask> & <clipPath> don't work when the SVG is external
- Needs manual work ... or tools like:

ICON-DIPEINE - " 🚚 SVG icon pipeline - Optimize icons & build SVG sprites"

JetBrains SVG sprite loader - "Webpack loader for creating SVG sprites."

OSVG-USE - "a set of tools and bundler plugins, to ergonomically load SVG files as components, via SVG's <use href> mechanism"

Replacing JS with CSS

```
const Icon = (className) \Rightarrow (
```

```
// add a class and let any consumer handle the details via CSS // 
<svg><use href={`${HeartIcon}#heart`} className={`heart ${className}`} /></svg>
);
const YellowHeart = () => <Icon className="yellow" />;
const BigHeart = () => <Icon className="big" />;
const App = () => <><YellowHeart /><BigHeart /></>;
```

.heart { fill: currentcolor } /* 📨 apply the current `color` */

/* I those classes might even come from your design system and don't need to be SVG specific */
.big { width: 300px }
.yellow { color: #FFFF00 }

3. Inline in HTML

Pro's:

- No extra HTTP request -> renders immediately
 - + good for logos
 - + good for search & hamburger icons
- Pretty much makes sense for anything important above-the-fold, where you want the user to be able to interact right away

Con's:

- More DOM nodes / DOM depth
- More to download, less to cache (unless you cache the entire page)

3. Inline in HTML

- 1. Like with critical CSS, inline carefully. Critical CSS is recommended to stay below 14 kB.
- 2. Use data URIs () or if you run into the caveats, inline the full <svg>

Inling != "put into the JS bundle again"

Inlining the server way

Next.js: Don't add **"use client"**-> makes the SVG automatically a React Server Component (= removed from JS bundle)

Inlining the server way

All other scenarios:

```
import fs from "node:fs";
const svgIcons = await fs.readFile("path/to/icons.svg"); // ← load SVG file content
const svgIcons2 = await fs.readFile("path/to/icons-2.svg"); // ← load SVG file content
// ... router might come from HTTP frameworks like fastify or express ...
app.get("/", function () {
  const reactOutput = renderToString(App);
  return `<!doctype html><head><title>SVG-in-HTML</title></head>
     <body>
      \leftarrow! — U output the SVG sprite to be re-used and make it invisible \rightarrow
      <div style="display:none">${svgIcons}</div>
      ${reactOutput}
           \blacksquare less important ones here \longrightarrow
      ←!---
      <div style="display:none">${svgIcons2}</div>
    </body>`;
});
```

In the case of CORS

"SVG <use> elements don't currently have any way to ask for crossorigin permissions. They just don't work cross-origin, at all."

- O'Reilly Media book by Amelia Bellamy-Royds, Kurt Cagle, and Dudley Storey

SVGs are "old", back then CORS wasn't a thing. But CSS knows how to treat CORS:

But: A mask, like , is also not part of the DOM, so caveats apply here as well.

Give it some love

- Although basically everyone knows and uses SVGs, browsers are slow to implement new SVG features
- This leads to a limited feedback cycle between spec authors & browser devs
- Check out how cool this would be: <u>https://kizu.dev/svg-linked-parameters-workaround/#the-spec</u>

```
.icon {
    link-parameters:
    param(--background, pink)
    param(--accent, var(--accent))
    ;
}
```

Any could then read --background

Measure, then optimize.

(or if you start, use one of the mentioned tools)

But no matter what you do, NEVER put a PNG/JPG in the SVG:



https://www.linkedin.com/posts/mattzeunert_normally-svg-images-are-goodfor-web-performance-activity-7308843314412179456-BmcF/



Thank you. Questions?

Find me on X: <u>@kurtextrem</u> | Bluesky: <u>@kurtextrem.de</u> | LinkedIn: <u>in/kurtextrem</u>