

# Better Themes with Scalable Vector Graphics (SVG)

It's not just images 😊

# Who am I?

- Bernhard Kau
- Berlin, Germany
- PHP Developer
- WordPress Plugin Developer
- „From image to code“ Frontend Developer
- Organizer of the WP Meetup and WordCamp Berlin
- Blogger on [kau-boys.de](http://kau-boys.de)
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# What is a Scalable Vector Graphic?

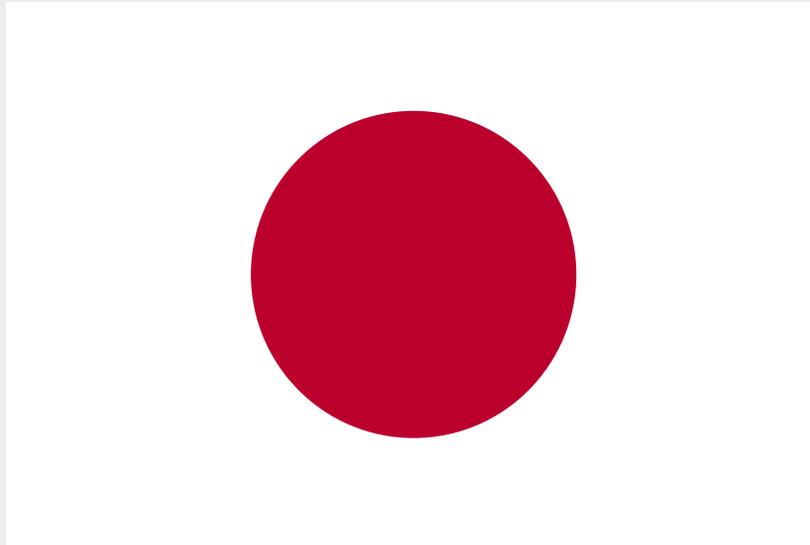
- It's a graphic ... at least most of the time
- It's a vector format
- It's scalable ... as large as you want ... without a loss of quality
- Technically an XML file
- So it's code! Spooky 😊

# So what does a SVG look like?

```
<?xml version="1.0" encoding="UTF-8"?>
<svg xmlns="http://www.w3.org/2000/svg" width="900" height="600">
  <rect fill="#ffffff" height="600" width="900"/>
  <circle fill="#bc002d" cx="450" cy="300" r="180"/>
</svg>
```

# So what does a SVG look like?

```
<?xml version="1.0" encoding="UTF-8"?>  
<svg xmlns="http://www.w3.org/2000/svg" width="900" height="600">  
  <rect fill="#ffffff" height="600" width="900"/>  
  <circle fill="#bc002d" cx="450" cy="300" r="180"/>  
</svg>
```

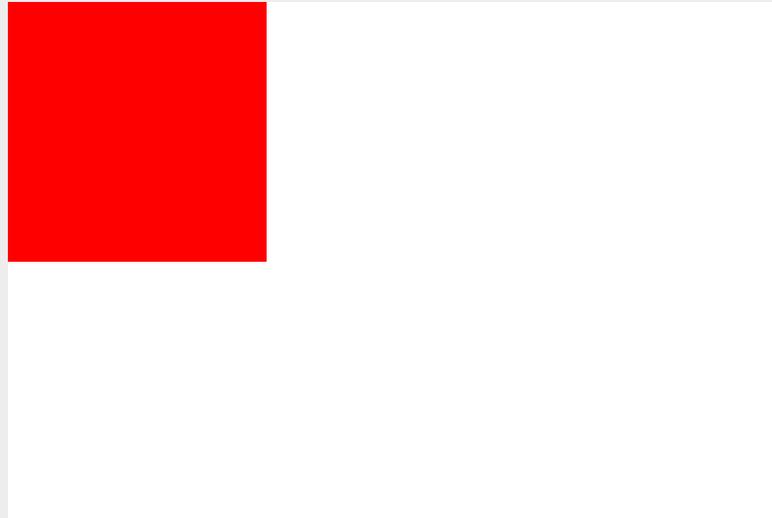


# Got it? So what do we see here?

```
<?xml version="1.0" encoding="UTF-8"?>
<svg xmlns="http://www.w3.org/2000/svg" width="600" height="400">
  <rect fill="#ffffff" width="600" height="400" x="0" y="0" />
  <rect fill="#fe0000" width="200" height="200" x="0" y="0" />
</svg>
```

# Got it? So what do we see here?

```
<?xml version="1.0" encoding="UTF-8"?>  
<svg xmlns="http://www.w3.org/2000/svg" width="600" height="400">  
  <rect fill="#ffffff" width="600" height="400" x="0" y="0" />  
  <rect fill="#fe0000" width="200" height="200" x="0" y="0" />  
</svg>
```



# How to use SVG images?

- Using an `<img>` tag

```

```

# How to use SVG images?

- Using an `<object>` tag

```
<object type="image/svg+xml" data="Flag_of_Bilbao.svg">  
    
</object>
```

# How to use SVG images?

- Using a `<picture>` tag

```
<picture>  
  <source type="image/svg+xml" srcset="Flag_of_Bilbao.svg">  
    
</picture>
```

# How to use SVG images?

- As a CSS background image

```
.flag-bilbao {  
    background-image: url( "Flag_of_Bilbao.svg" );  
}
```

# How to use SVG images?

- As a CSS background image with a „Data-URI“

```
.flag-bilbao-base64 {  
  background-image: url('data:image/svg+xml;base64,PD94bWwgdmVyc2lvbj...');  
}  
  
.flag-bilbao-svg {  
  background-image: url('data:image/svg+xml;utf8,<svg xmlns="http://...');  
}  
  
.Flag-bilbao-svg-urlencoded {  
  background-image: url('data:image/svg+xml;utf8,%3Csvg%20xmlns%3D%22...');  
}
```

# How to use SVG images?

- Embedding them into the HTML

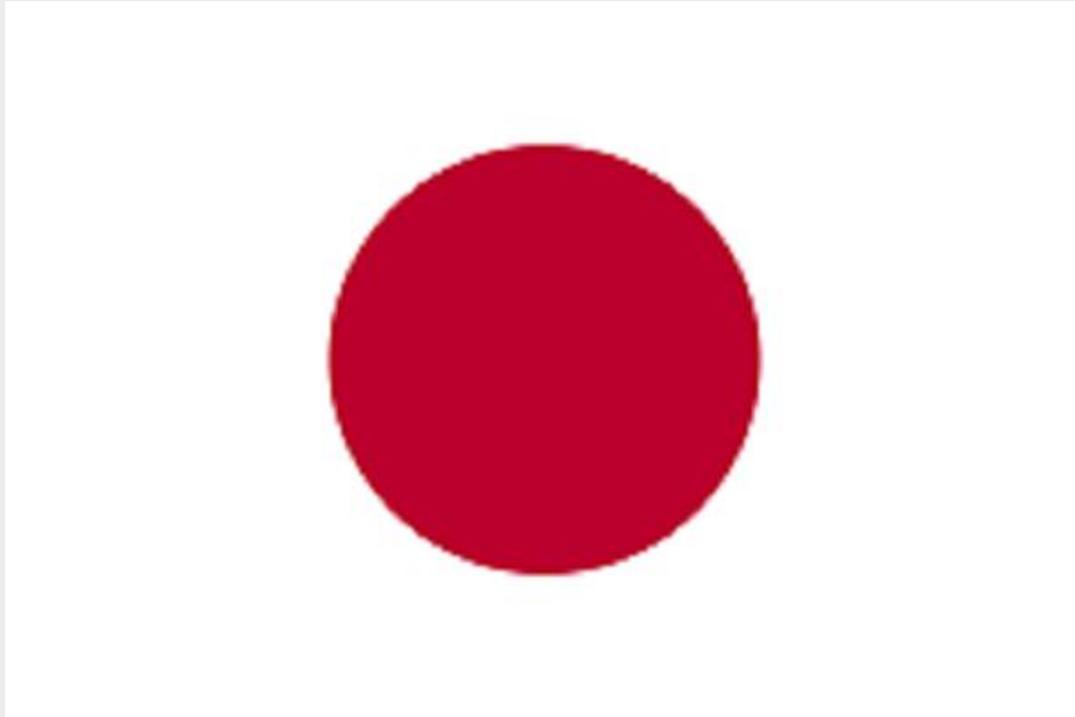
```
<div>  
  <svg xmlns="http://www.w3.org/2000/svg" width="600" height="400">  
    <title>Flag of Bilbao</title>  
    <rect fill="#ffffff" width="600" height="400" x="0" y="0" />  
    <rect fill="#fe0000" width="200" height="200" x="0" y="0" />  
  </svg>  
</div>
```

Note: Do not add `<?xml version="1.0" encoding="UTF-8"?>`

# Why should I use SVG?

**Scaled PNG at 3.0 „Pixel Density“**

**SVG**



# Why should I use SVG?

```

```

```

```

# Which browser supports SVG?



Source: <http://caniuse.com/svg>

# SVG is more than just images!

- A web font format
- A better replacement for icon web fonts
- A way to create image maps
- A container for CSS filters

# SVG as an icon font replacement

	Icon Font	SVG
Rendering	May be anti-aliased	Just “as is”
CSS Control	Only text styles usable	CSS font properties + SVG-specific CSS
Positioning	Hard, due to line-height, vertical-align, letter-spacing, word-spacing	Easy, it’s just an ordinary image
Loading Issues	CORS headers, Content-Type, broken CDN	Just hosted as a regular image
Other Issues	Proxy browsers (Opera Mini), User overwrites fonts, blocking of custom fonts	No issue even with proxy browsers
Semantics	Pseudo-Elements, <span>, <i>, this is bad	An image is an image
Accessibility	Text might be tried to read by screen reader	Attributes like title, desc, aria-labelledby
Ease of use	Not very easy to create custom font	Have I mentioned, they are images? 😊
Browser Support	Even in IE6	Not in IE 8 and Android 2.3

# SVG as an icon font replacement



WordCamp London 2016 - Sarah Semark

<http://triggersandsparks.com/talks/SVG-icons/>  
<http://wordpress.tv/?p=58742>

# SVG for image maps

```
<?xml version="1.0" encoding="utf-8"?>
<svg xmlns="http://www.w3.org/2000/svg"
  xmlns:xlink="http://www.w3.org/1999/xlink"
  x="0px" y="0px" width="100%" height="100%"
  viewBox="0 0 591.504 800.504" overflow="visible"
  enable-background="new 0 0 591.504 800.504"
  xml:space="preserve">
  <g id="Bundesrepublik_Deutschland">
    <a xlink:href="/thuerigen" xlink:title="Bundesland Thüringen">
      <path id="Thüringen" fill="#B1D1A3,,
        stroke="#284566" stroke-width="0.5"
        d="M312.004,351.725l1.845-0.401l3.39,0.274l1.912,..."/>
    </a>
    ...
  </g>
</svg>
```



# SVG as CSS filters

```
<svg xmlns="http://www.w3.org/2000/svg">
  <filter id="monochrome"
    color-interpolation-filters="sRGB"
    x="0" y="0" height="100%" width="100%">
    <feColorMatrix type="matrix"
      values="1.00 0 0 0 0
             0.80 0 0 0 0
             0.65 0 0 0 0
             0    0 0 1 0" />
  </filter>
</svg>
```



```
.inline-filter {
  filter: url(#monochrome);
}
.external-filters {
  filter: url("filters.svg#monochrome");
}
```

# Sources

- <https://www.paciellogroup.com/blog/2013/12/using-aria-enhance-svg-accessibility/>
- <http://www.iheni.com/just-how-accessible-is-svg/>
- <https://css-tricks.com/svg-fallbacks/>
- <https://css-tricks.com/a-complete-guide-to-svg-fallbacks/>
- <https://css-tricks.com/probably-dont-base64-svg/>
- <https://css-tricks.com/icon-fonts-vs-svg/>
- <https://css-tricks.com/color-filters-can-turn-your-gray-skies-blue/>
- <https://www.image-map.net/>

# Thank you for your attention!

Slides are available on [kau-boys.com](http://kau-boys.com)