

Houdini Paint API Reference

CSS Houdini & Paint Worklets for Dynamic Patterns

About This Document

This reference accompanies the article: CSS Houdini & Paint Worklets for Dynamic Patterns

Read the full article at: <https://svgeneration.com/docs/css-houdini-paint-api>

Article Summary

Use CSS Houdini's Paint API to create parameterized, GPU-native SVG-like backgrounds using JavaScript worklets.

What Is the Paint API?

The CSS Houdini Paint API (also called CSS Custom Paint) lets you define a JavaScript class that renders to a Canvas 2D context, then use it as a CSS image value: `background-image: paint(myPainter)`. The browser calls your paint function whenever it needs to render the background. It's parameterized, GPU-native, and responds to CSS custom property changes without JavaScript in the main thread.

Registering a Paint Worklet

Paint worklets run in a separate thread. Register one from your main JS file: `CSS.paintWorklet.addModule('/pattern-worklet.js')`. In the worklet file, call `registerPaint('my-pattern', class { ... })`. The class must implement a `paint(ctx, geometry, properties)` method where `ctx` is a Canvas 2D rendering context.

```
Code example: // pattern-worklet.js
registerPaint('dots', class {
  static get inputProperties() {
    return ['--dot-color', '--dot-size', '--dot-spacing'];
  }
  paint(ctx, { width, height }, props) {
    const color = props.get('--dot-color').toString().trim();
    const size = parseFloat(props.get('--dot-size'));
    const spacing = parseFloat(props.get('--dot-spacing'));
    for (let x = spacing/2; x < width; x += spacing) {
      for (let y = spacing/2; y < height; y += spacing) {
        ctx.beginPath();
        ctx.arc(x, y, size/2, 0, Math.PI * 2);
        ctx.fillStyle = color;
        ctx.fill();
      }
    }
  }
});
```

Free Resources

Visit [SVGeneration.com](https://svgeneration.com) for 600 free SVG background patterns. No attribution required.

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