



# High Contrast Mode, for real

@CSSence

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# **What?**

(High) Contrast Mode?

The main feature is that it **limits and controls the range of colors**, making it easier for users to emphasize content and UI in a way that works for them.

In other words, they **force colors**.

— [polypane.app/blog/forced-colors-\[...\] -guide](https://polypane.app/blog/forced-colors-[...] -guide) 

Unlike other operating system display modes that invert colors or set a dark mode flag, Windows High Contrast Mode completely overrides authored colors with user-set colors.

— [sarahmhigley.com/writing/whcm-quick-tips](https://sarahmhigley.com/writing/whcm-quick-tips/) 

Settings

Home

Find a setting

Ease of Access

Vision

- Display
- Mouse pointer
- Text cursor
- Magnifier
- Colour filters
- High contrast**
- Narrator

Hearing

- Audio
- Closed captions

Interaction

- Speech
- Keyboard
- Mouse

## High contrast

Make text and apps easier to see by using more distinct colours.

### Use high contrast

Turn on high contrast



Press left Alt + left Shift + Print Screen to turn high contrast on and off.

Choose a theme

High Contrast Black

Select a coloured rectangle to customise high contrast colours

	Text
	Hyperlinks
	Disabled Text
	Selected Text
	Button Text
	Background

Apply Cancel

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High Contrast #1

High Contrast #2


High Contrast Black

High Contrast White

Custom

## **Low Contrast**

High Contrast Mode is used by some to produce **low contrast** on the screen.

— [adrianroselli.com/2021/02/whcm-and-system-colors](https://adrianroselli.com/2021/02/whcm-and-system-colors) 

# Why?

[Microsoft] has said that upwards of 4% of their users do [force colors].

— youtube.com «Forced Colors & CSS» [🔗](#), by Kevin Powell

# How?

- First rule of ARIA: **Don't use ARIA.\***
- First rule of High Contrast Mode:  
**Don't design for High Contrast Mode.**

\*) ..., use native HTML instead.



## OS


- Windows 7-10: **High Contrast Mode.**
- Windows 11: **Contrast Themes.**
- Mac OS: It's complicated, but no.
- Linux: No?

## **Browsers**

Support is good.\*

\*) With Safari being the exception.

There is a ton of prior content discussing Windows High Contrast Mode (WHCM) and web content. The catch is that content covers four (five?) different implementations across more than a decade of support: Internet Explorer, Edge, the other Edge, Edge plus IE aliasing, and hardly anything on Firefox. Which means much of it no longer applies.

— [adrianroselli.com/2021/02/whcm-and-system-colors](https://adrianroselli.com/2021/02/whcm-and-system-colors) 

**For real!**



## What happens... (1/2)

- Colors are replaced.
  - Not SVG's fill/stroke.
  - Not CSS system colors [🔗](#).
- Border colors are replaced.
- Outline colors are replaced.

## What happens... (2/2)

- Background colors are gone.
- Background images are ..., well:
  - `url()` based images are kept,
  - but gradients are gone.
- Box & text shadows are gone.

## The media query

```
@media (forced-colors: active*) {  
    ...  
}
```

\*) none | active

## The other media query

```
@media (prefers-contrast: more*) {  
    ...  
}
```

\*) no-preference | more | less | custom



## The future media query?

```
@media (prefers-contrast: forcedcustom) {  
    ...  
}
```

— [blogs.windows.com/msedgedev/2020/09/17/styling\[...\]-forced-colors](https://blogs.windows.com/msedgedev/2020/09/17/styling[...]-forced-colors) 

## The retired media query

```
@media (-ms-high-contrast: active) {  
    ...  
}
```

## Combining media queries

```
@media (forced-colors: active) and  
      (prefers-color-scheme: dark) {  
    ...  
}
```

# The ToDo List (1/2)

- CSS system colors [🔗](#)
- :focus
- :hover, :active, etc.
- Whitespace & borders
- Buttons vs. links

## Transparent is a color

```
:focus {  
  outline: none;  
  outline: 0.125rem solid transparent;  
  box-shadow: 0 0 0.25rem #bada55;  
}
```

## **The ToDo List (2/2)**

- Icons
- opacity
- The Media Query
- The Backplate
- The Override

## The Backplate

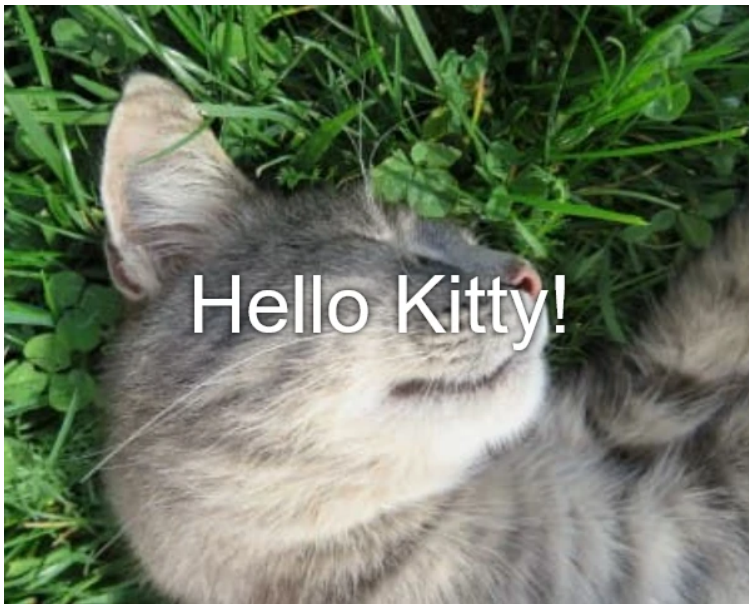


Image on the right has backplate applied.

## The Override

```
.element {  
    forced-color-adjust: none*;  
}
```

\*) auto | none | preserve-parent-color



## **Testing**

Always test multiple themes, especially ...

- 1× “Light on Dark” and
- 1× “Dark on Light”.

## ! color(s)

```
@media (forced-colors: active) {  
    ...  
}  
.element {  
    forced-color-adjust: none;  
}
```

---

You've made it this far!

