



Font synthesis in CSS

There are times when browsers are too helpful. When there is no font to render bold, italic or small-caps text the browser will “make up” or synthesize the styles with unpredictable results but, likely, not what you want.

The [font-synthesis](#) descriptor allows authors to control whether supporting browsers will synthesize boldface, italics, small caps or a combination of one more of these when there are no fonts available to render the correct.

The possible values for the descriptor are:

`none` : Neither bold, italic, nor small-caps typefaces may be synthesized.

`weight` : A bold typeface may be synthesized.

`style` : An italic typeface may be synthesized.

`small-caps` : A small-caps font may be synthesized

A combination of 1 or more values from the above list : The selected value(s) may be synthesized

The following table presents a list of the possible values for font-synthesis along with the equivalent values for the individual properties (discussed later).

font-synthesis value	font-synthesis-weight value	font-synthesis-style value	font-synthesis-small-caps value
none	none	none	none
weight	auto	none	none
style	none	auto	none
small-caps	none	none	auto
weight style	auto	auto	none
weight small-caps	auto	none	auto
style small-caps	none	auto	auto

font-synthesis value	font-synthesis- weight value	font-synthesis-style value	font-synthesis-small- caps value
weight style small-caps	auto	auto	auto

The default value for the descriptor is `style weight small-caps` meaning that all three options are enabled if needed.

you chose the value `non` then there will be no italics and boldface styles applied to the document. This may significantly change the looks and the semantics of the document so be careful when and how you use it.

You can also work on properties for each individual `font-synthesis` property. The values are:

`font-synthesis-weight` : Controls whether bold typefaces are synthesized. Equivalent to the `weight` value in `font-synthesis`

`font-synthesis-style` : Controls whether bold typefaces are synthesized. Equivalent to the `style` value in `font-synthesis`

`font-synthesis-small-caps` : Controls whether bold typefaces are synthesized. Equivalent to the `small-caps` value in `font-synthesis`

This falls into the category of “It’s nice to have but be careful how you use it”. In an ideal world, we would load all the faces of the fonts we need but we don’t always have that luxury since, at the very least we need four different files to cover the basic variants of the font without synthesizing:

- Regular (weight 400)
- Italic (weight 400)
- Bold (weight 700)
- Bold Italic (weight 700)

Plus two additional files for each additional weight we might want to cover

- Regular (weight 200)
- Italic (weight 200)

or

- Extra Bold (weight 900)

- Extra Bold Italic (weight 900)

Variable fonts reduce the need for many files at the cost of larger font files but not all fonts have an italics/slant axis to control italics for the font.