

Determining Box Sizes in CSS

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box-sizing (1)

- The `box-sizing` CSS property controls how the width and height of a box are calculated.
- It controls how the border and the padding are taken into account.
- Relevant specification: [CSS Box Sizing Module Level 3](#) (W3C Working Draft, 17 December 2021)
- See also: [box-sizing \(MDN\)](#)

box-sizing (2)

The value of the property is either `content-box` or `border-box`:

- **content-box**: the `width` and `height` CSS properties specify the sizes of the content area, i.e., the border and the padding, are not taken into account.
 - This is the default behavior in CSS.
- **border-box**: the `width` and `height` CSS properties specify the visually-apparent sizes, including the border and the padding.
 - By default, web browsers use this option for specific HTML elements, e.g., `<table>`, `<select>`, `<button>`, or `<input type="checkbox">`.

box-sizing (3)

Example: What will be the (visually apparent) size of a `<div>` element to which the following style rule applies?

```
div.box {  
  border: 10px solid black;  
  box-sizing: content-box;  
  height: 200px;  
  padding: 20px;  
  margin: 50px;  
  width: 300px;  
}
```

- Width: $300\text{px} + 2 \times 20\text{px} + 2 \times 10\text{px} = 360\text{px}$
- Height: $200\text{px} + 2 \times 20\text{px} + 2 \times 10\text{px} = 260\text{px}$

box-sizing (4)

The screenshot shows the Firefox DevTools interface with the 'Layout' tab selected. Under the 'Box Model' section, a diagram illustrates the layout of an element. The element is a light purple rectangle with a total size of 360x260. The diagram shows the following dimensions:

- margin: 50 (top, bottom, left, right)
- border: 10 (top, bottom, left, right)
- padding: 20 (top, bottom, left, right)
- content: 300x200 (width x height)

The total width is 50 (margin) + 10 (border) + 20 (padding) + 300 (content) + 20 (padding) + 10 (border) + 50 (margin) = 360. The total height is 50 (margin) + 10 (border) + 20 (padding) + 200 (content) + 20 (padding) + 10 (border) + 50 (margin) = 260.

Below the diagram, the element's size is listed as 360x260 and its position as static. The 'Box Model Properties' section shows the following values:

- box-sizing: content-box
- display: block

Figure 1: Layout of the element in Firefox DevTools

box-sizing (5)

Example: What will be the (visually apparent) size of a `<div>` element to which the following style rule applies?

```
div.box {  
  border: 10px solid black;  
  box-sizing: border-box;  
  height: 200px;  
  padding: 20px;  
  margin: 50px;  
  width: 300px;  
}
```

- Width: 300px
- Height: 200px

box-sizing (4)

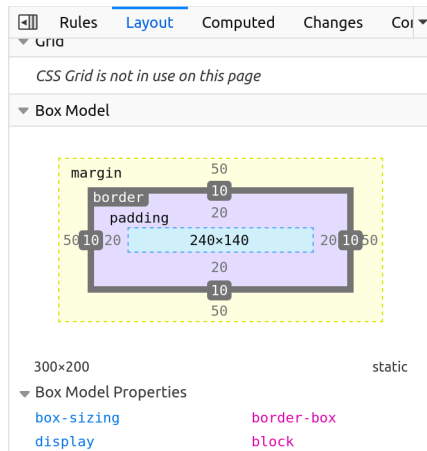


Figure 2: Layout of the element in Firefox DevTools

width and height

- The `width` and `height` CSS properties specify the **preferred width and height** of a box, respectively.
- The `min-width`, `max-width`, `min-height`, and `max-height` properties also affect the sizes of boxes.
- See:
 - [width \(MDN\)](#)
 - [height \(MDN\)](#)

min-width/min-height

- They set the minimum width/height of a box.
- They prevent the used value of the width/height property from becoming smaller than the value specified for min-width/min-height.
- The element's width/height is set to the value of min-width/min-height whenever min-width/min-height is larger than max-width/max-height or width/height.
- See:
 - [min-width \(MDN\)](#)
 - [min-height \(MDN\)](#)

max-width/max-height

- They set the maximum width/height of a box.
- They prevent the used value of the width/height property from becoming larger than the value specified for max-width/max-height.
- max-width/max-height override width/height, but min-width/min-height override max-width/max-height.
- See:
 - [max-width \(MDN\)](#)
 - [max-height \(MDN\)](#)