CSS3

RADIAL-GRADIENTS

What are radial-gradients?

A gradient is a **graduated blend between two or more colors** or between two tints of the same color.

In CSS3, we can use the radial-gradient value to apply **gradients** to the background of any HTML element.

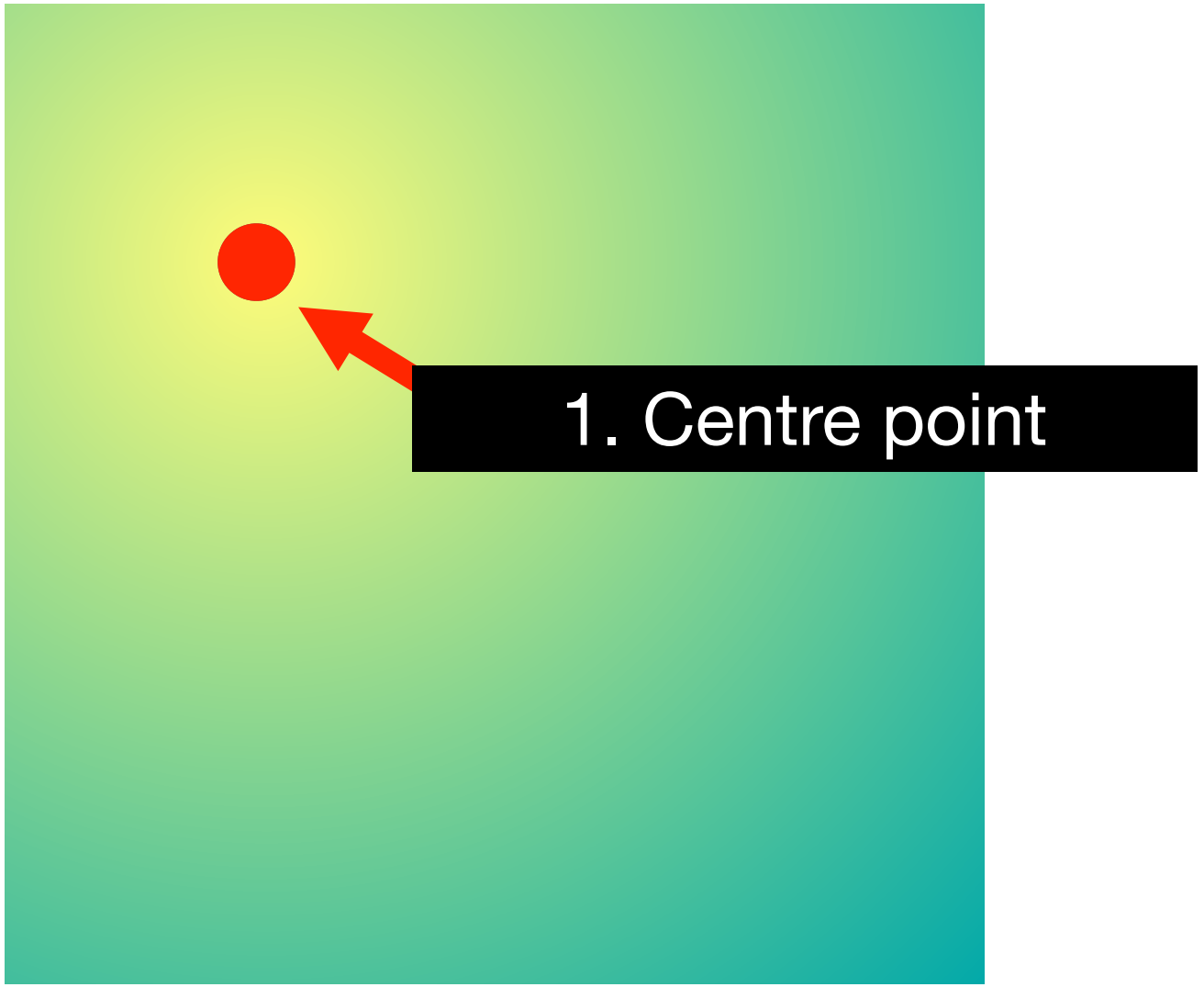
Gradients are **a type of generated image**. They are not a property. This means you can use gradients wherever you have been using url(image.png).

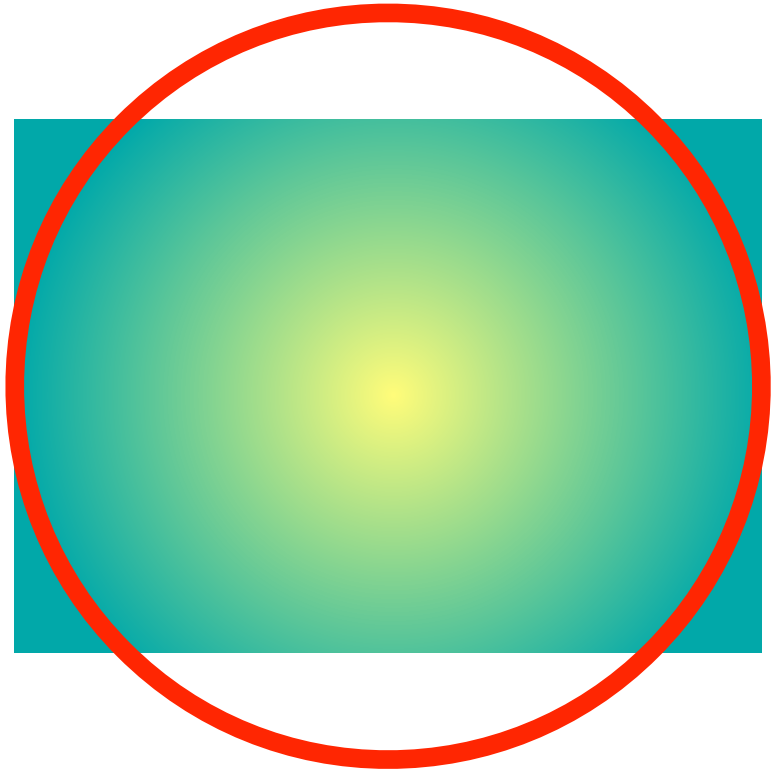
Gradients can be used as values for the **background-image and list-style-image** properties.

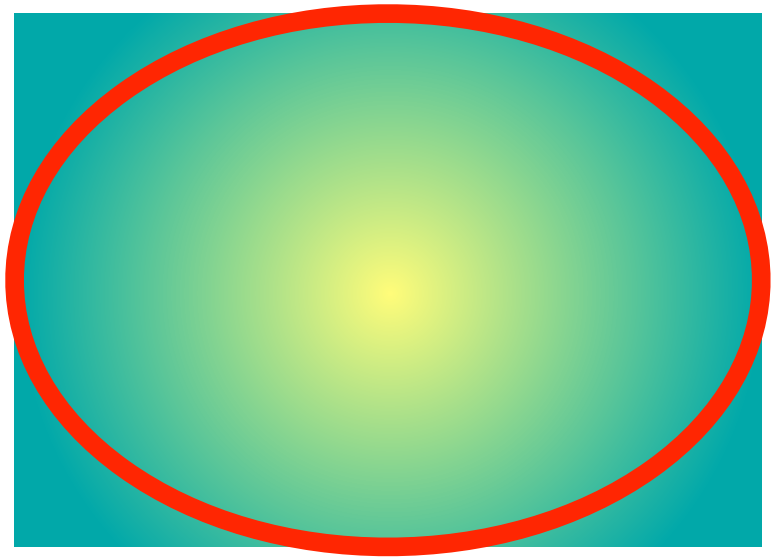
```
.one { background-image:
        radial-gradient(); }
.two { list-style-image:
        radial-gradient(); }
```

Breaking down radial-gradients

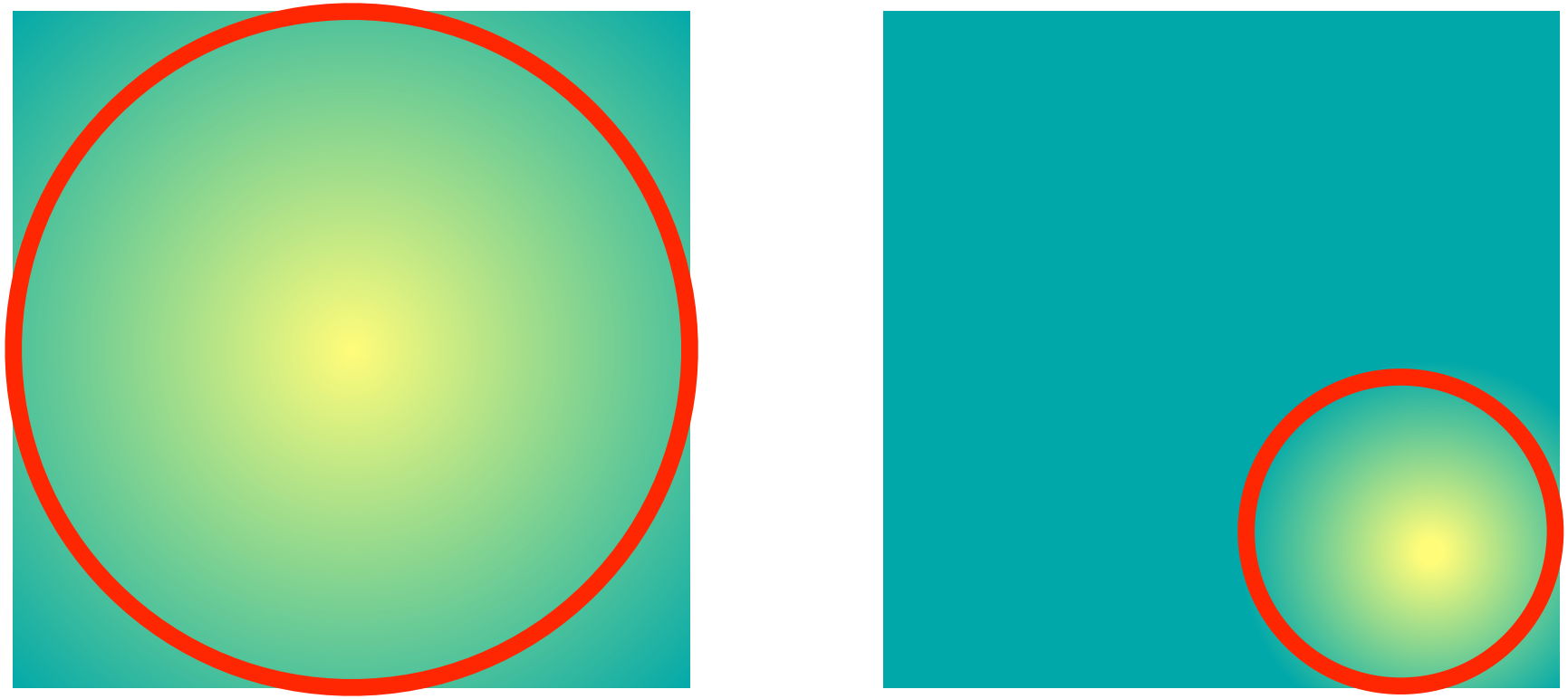
In order to create a radial-gradient, you need **five pieces of information**:


1. Centre point

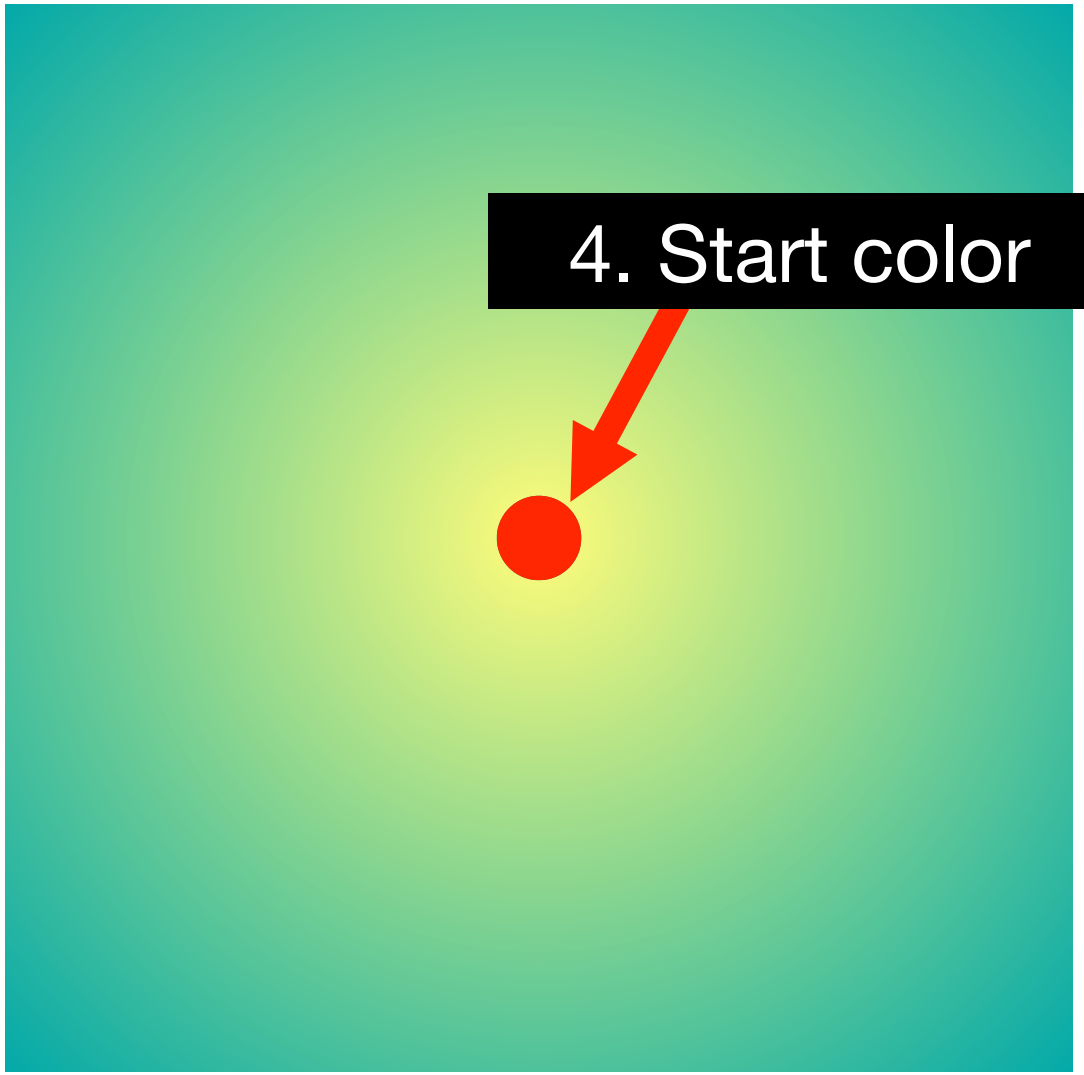


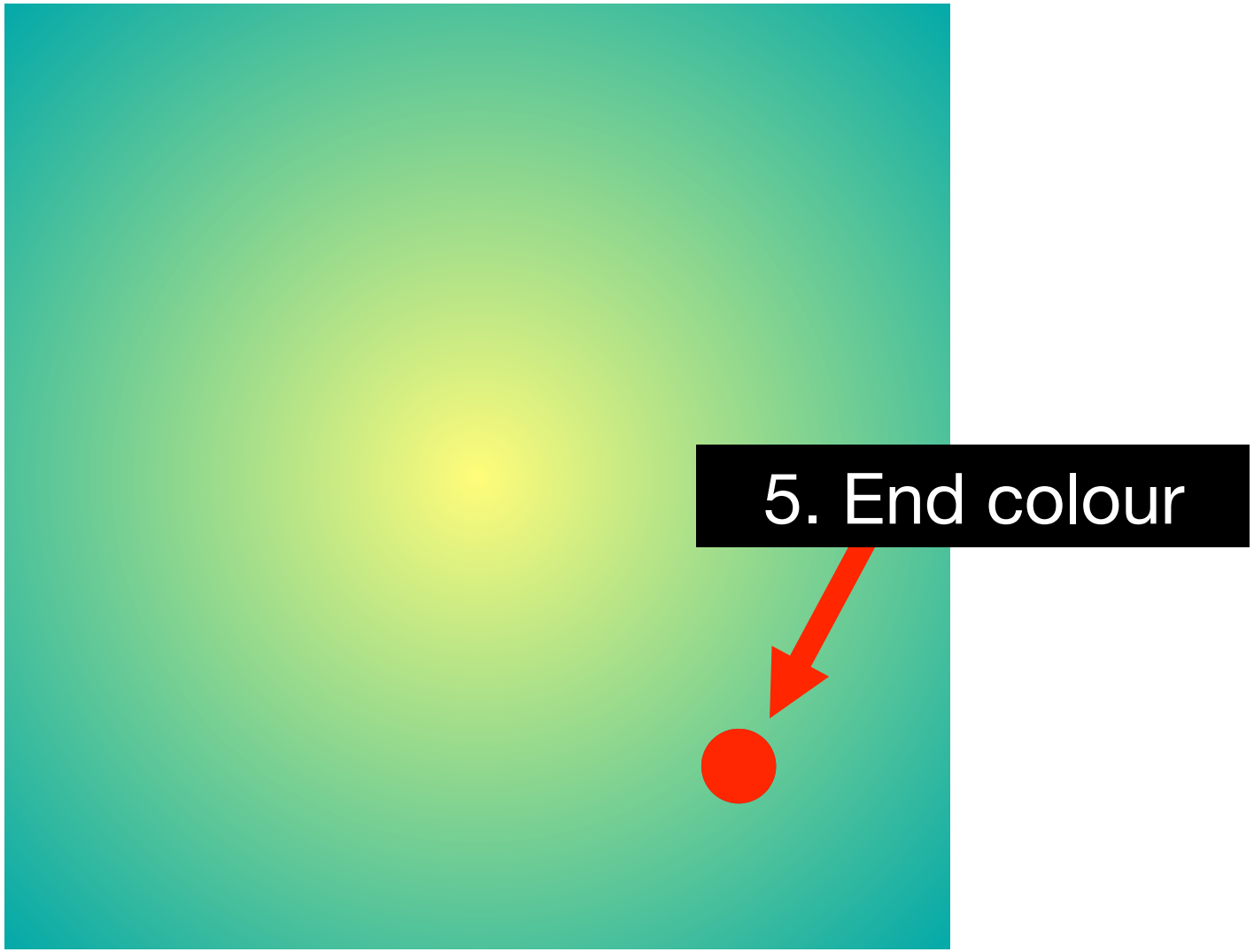


2. Shape - is it a circle or an ellipse?



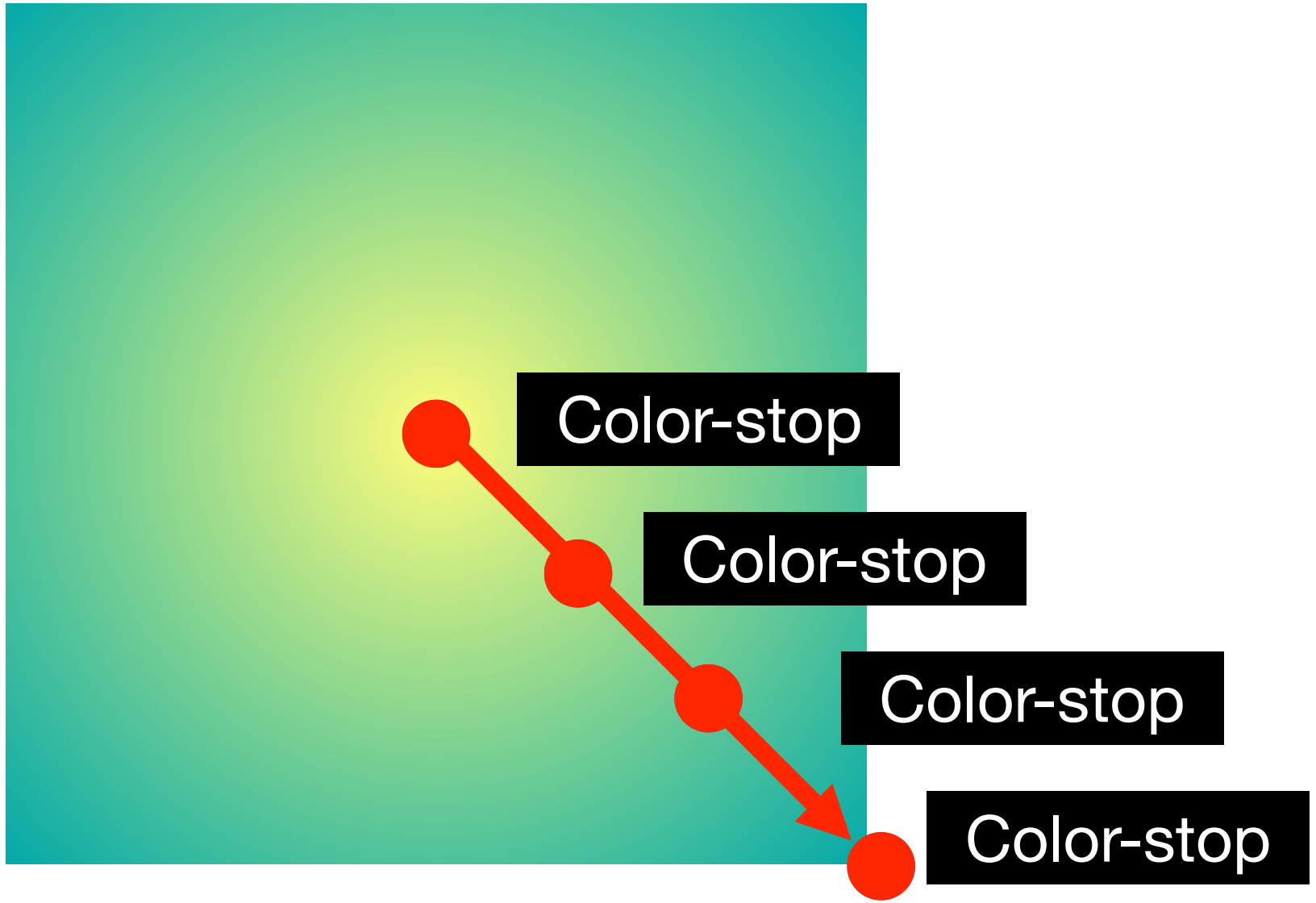
3. Size within the container


4. Start color


5. End colour

The start color and end color are called **“color-stops”**.

There can also be **multiple color-stops** along the gradient line.


Color-stop
Color-stop
Color-stop
Color-stop

Defining the centre

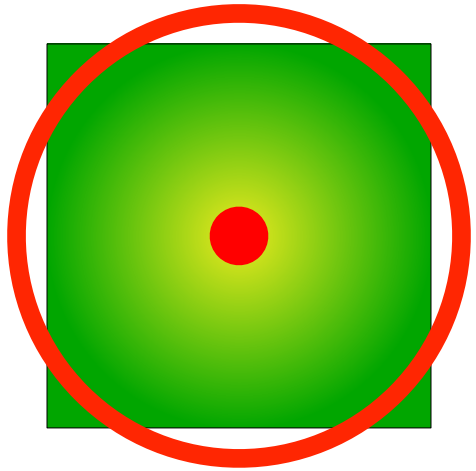
The center can be defined using one of four different methods:

leaving the center undefined
using a single keyword value
using a two keyword value
using a length value

Option 1: undefined

You can leave the background-position undefined, and the browser will use the **initial value “center center”** as the start point.

center center

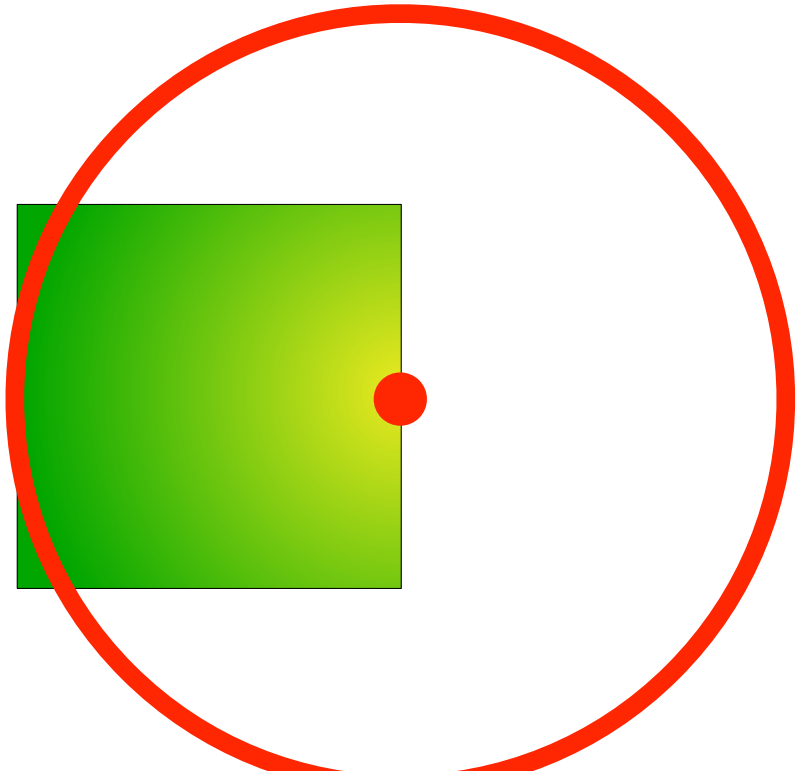


Option 2: single keyword

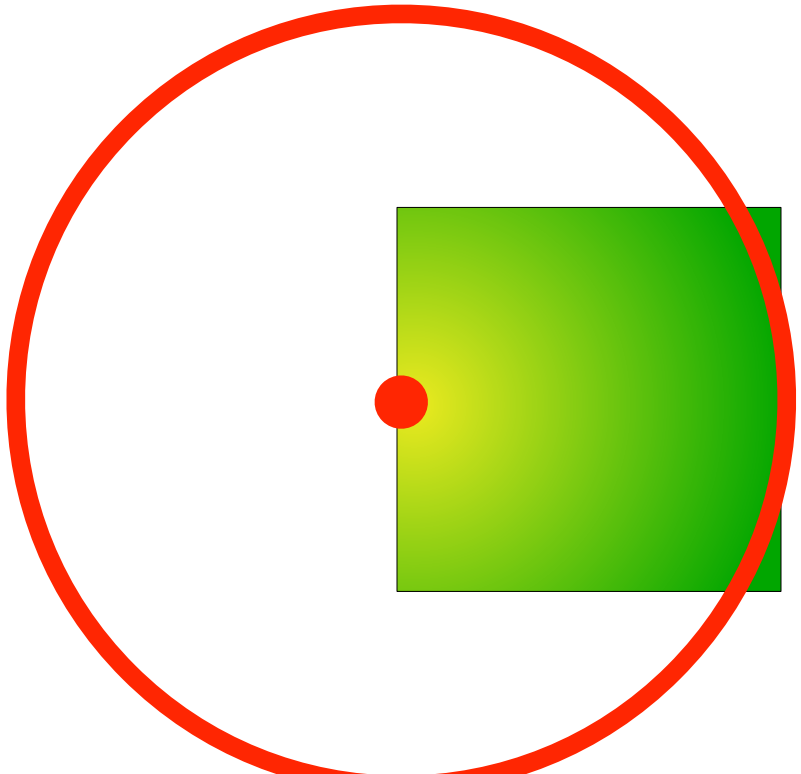
You can define the center of the radial-gradient using a single keyword:

left, right, bottom, top

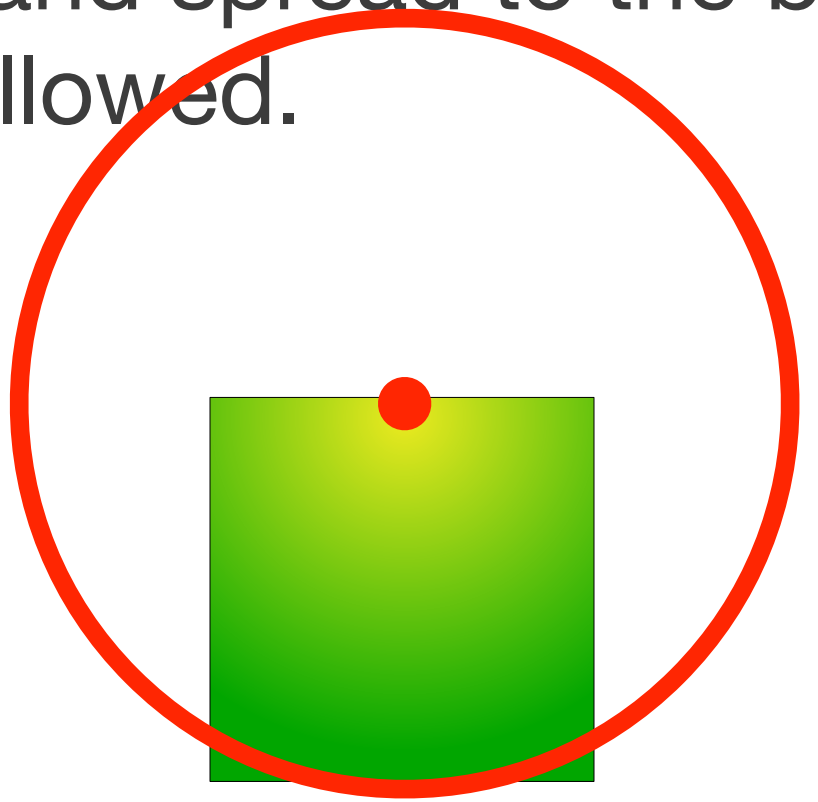
Right will start from the right edge of the container and spread to the left - as far as it is allowed.



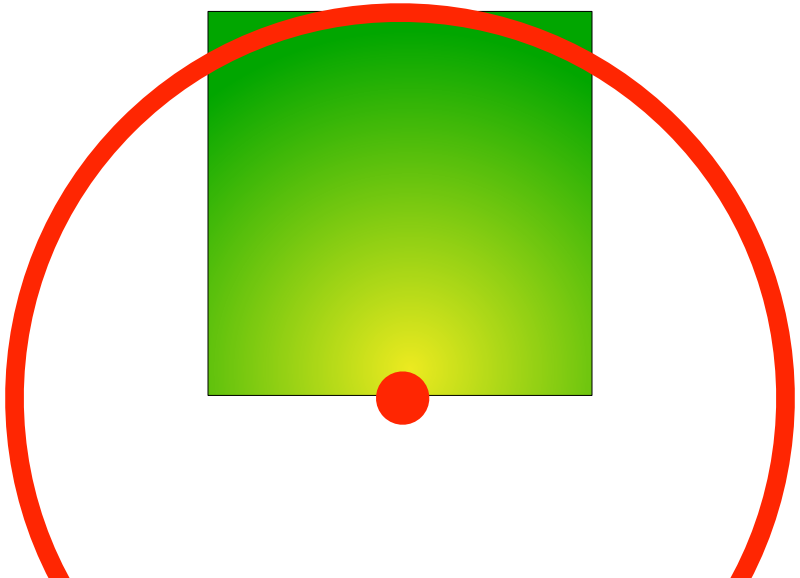
Left will start from the left edge of the container and spread to the right - as far as it is allowed.



Top will start from the top edge of the container and spread to the bottom - as far as allowed.



Bottom will start from the bottom edge of the container and spread to the top - as far as it is allowed.

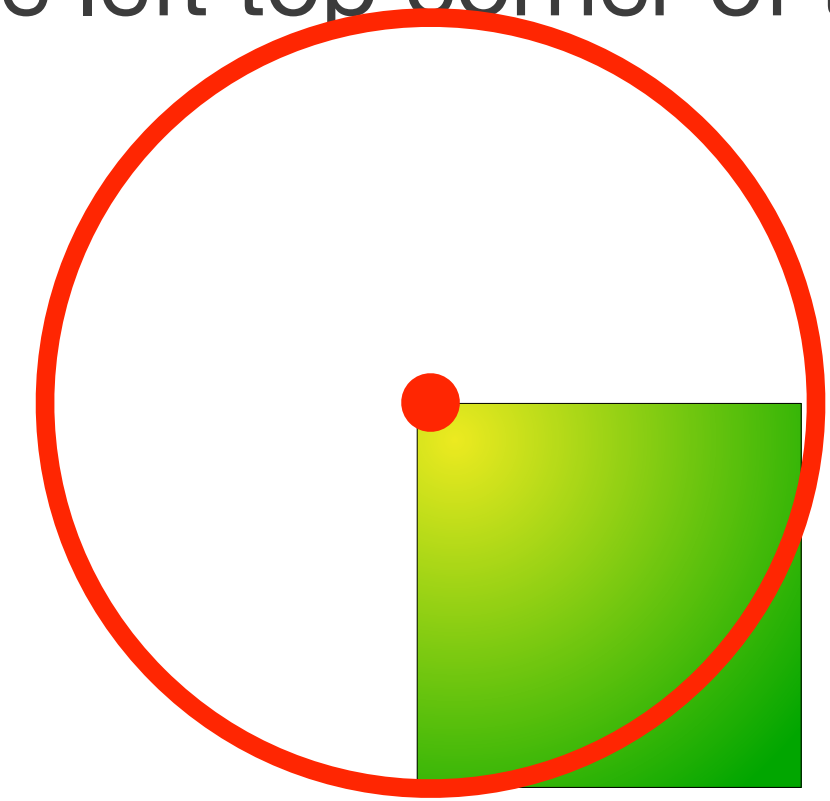


Option 3: two keywords

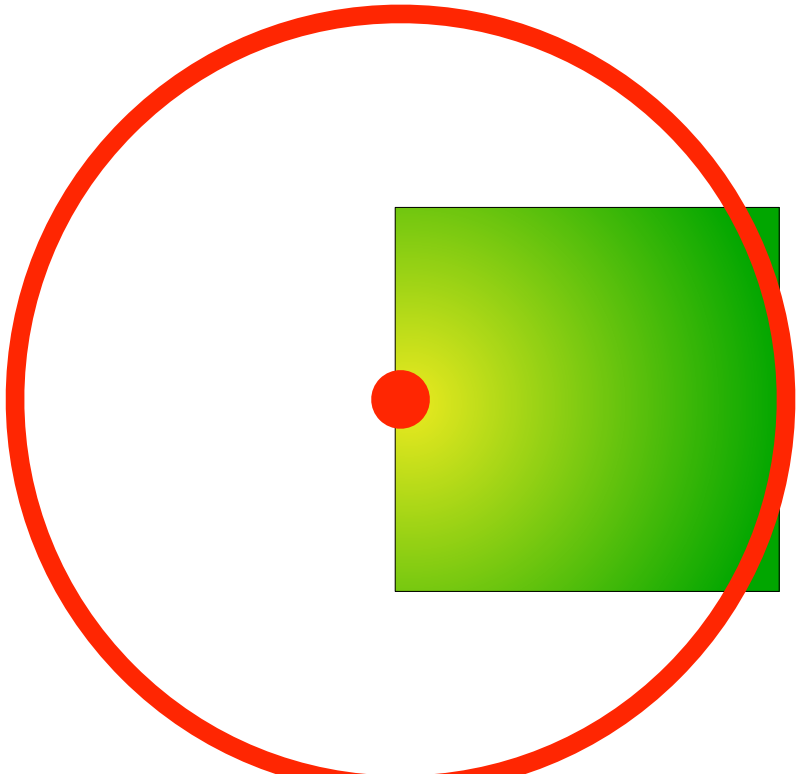
You can define the center of the radial-gradient using two keywords:

left top, left center, left bottom, center top, center center, center bottom, right top, right center, right bottom

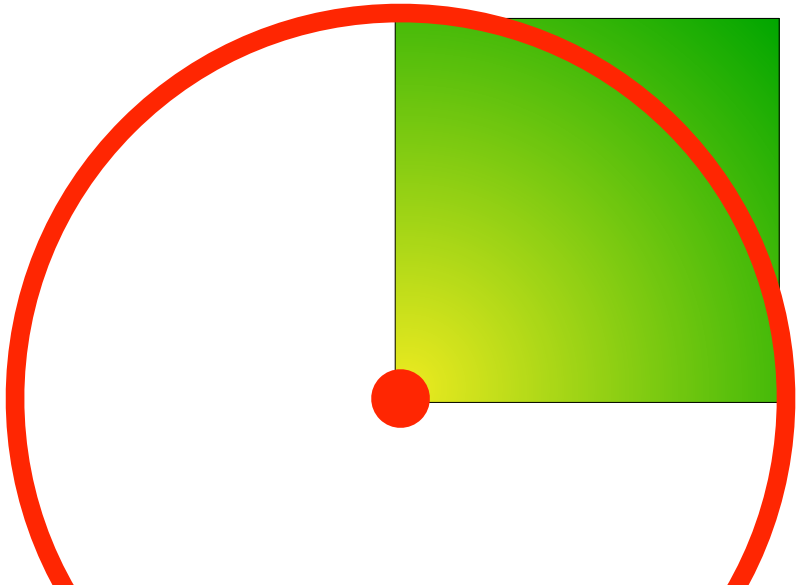
Left top will center the radial-gradient in the left top corner of the container.



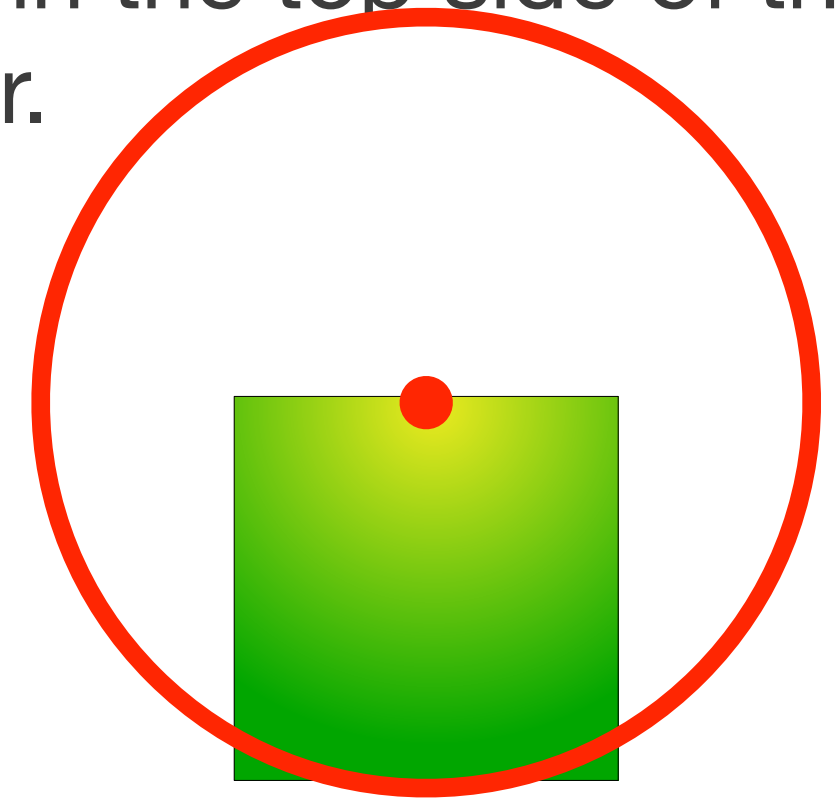
Left centre will center the radial-gradient in the left side of the container.



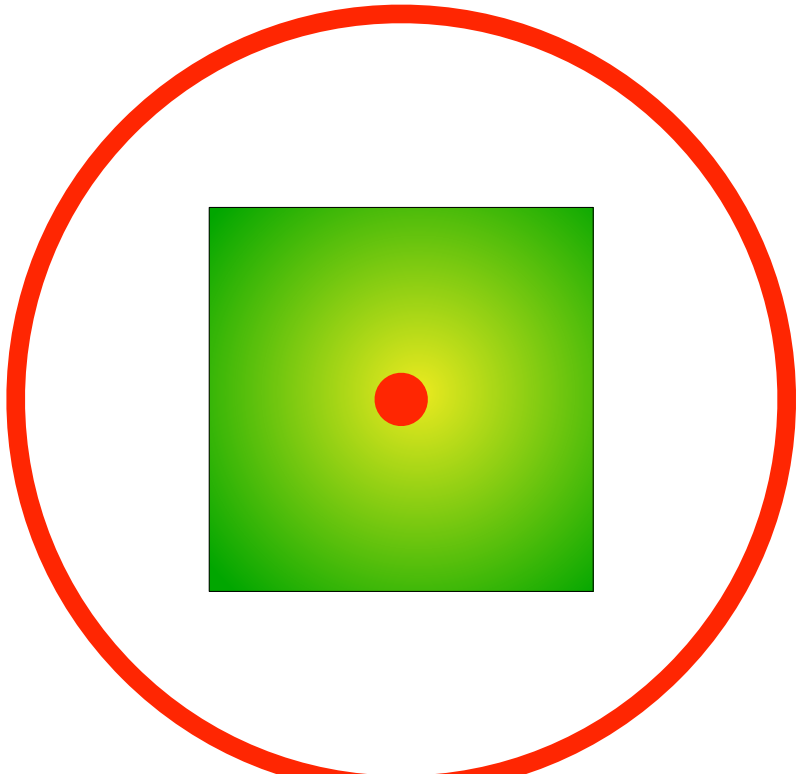
Left bottom will center the radial-gradient in the left bottom corner of the container.



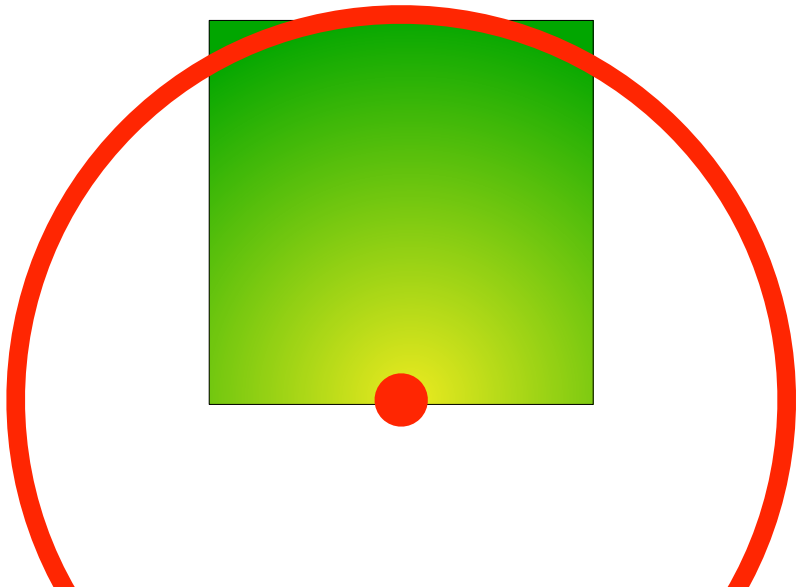
Center top will center the radial-gradient in the top side of the container.



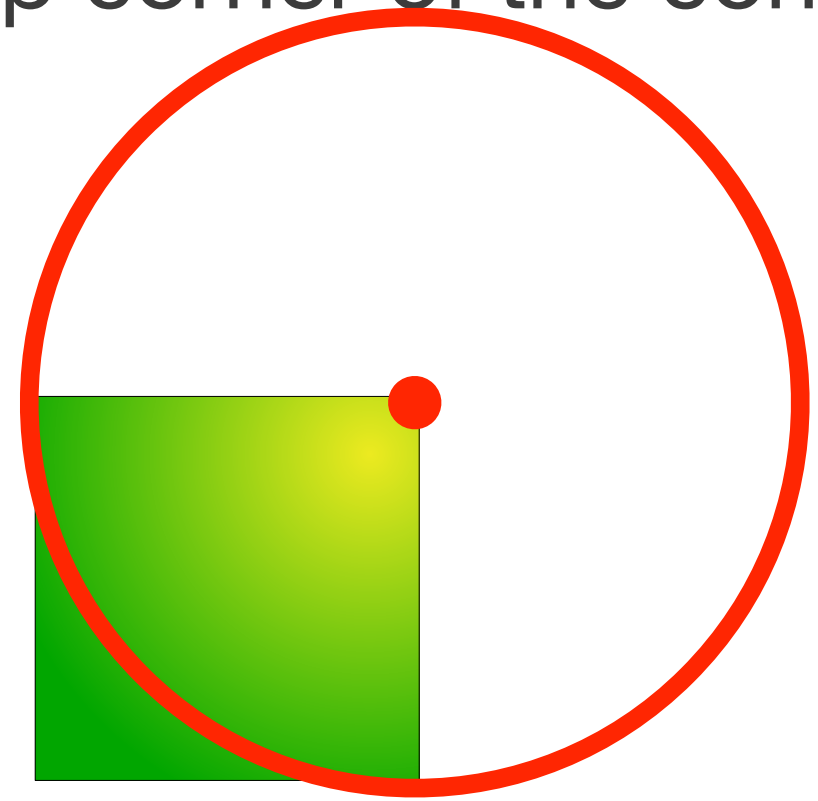
Center center will center the radial-gradient in the centre of the container.



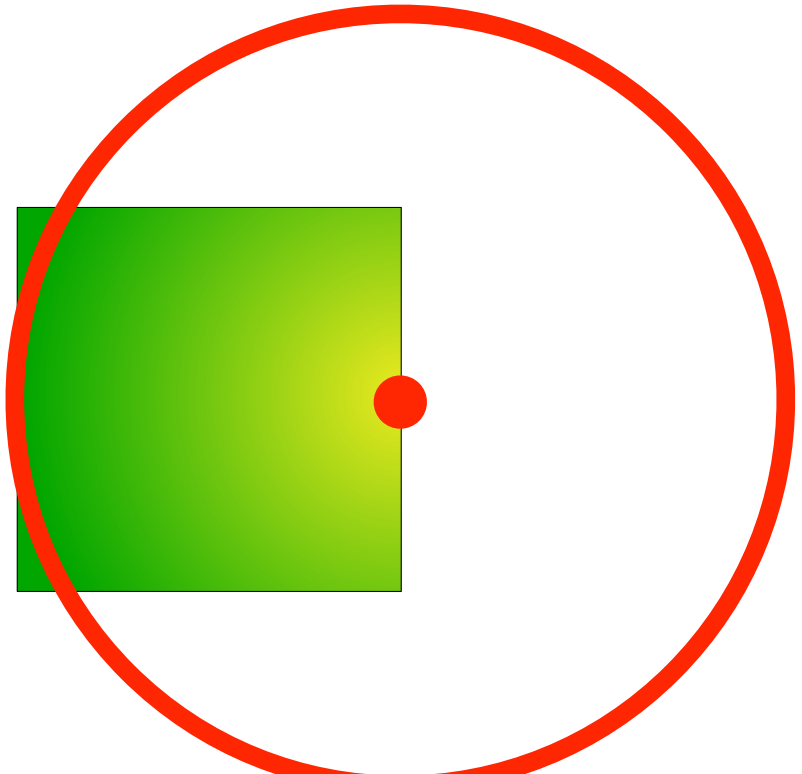
Center bottom will center the radial-gradient in the bottom side of the container.



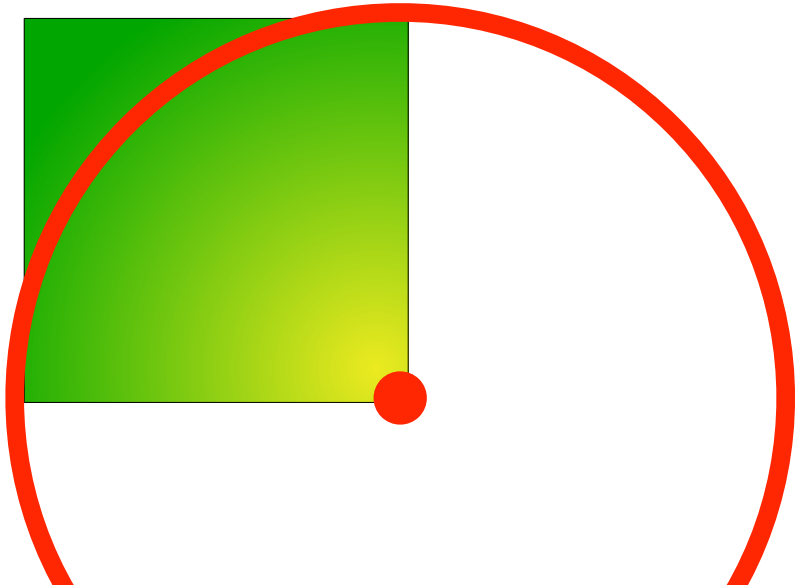
Right top will center the radial-gradient in the right top corner of the container.



Right center will center the radial-gradient in the right side of the container.



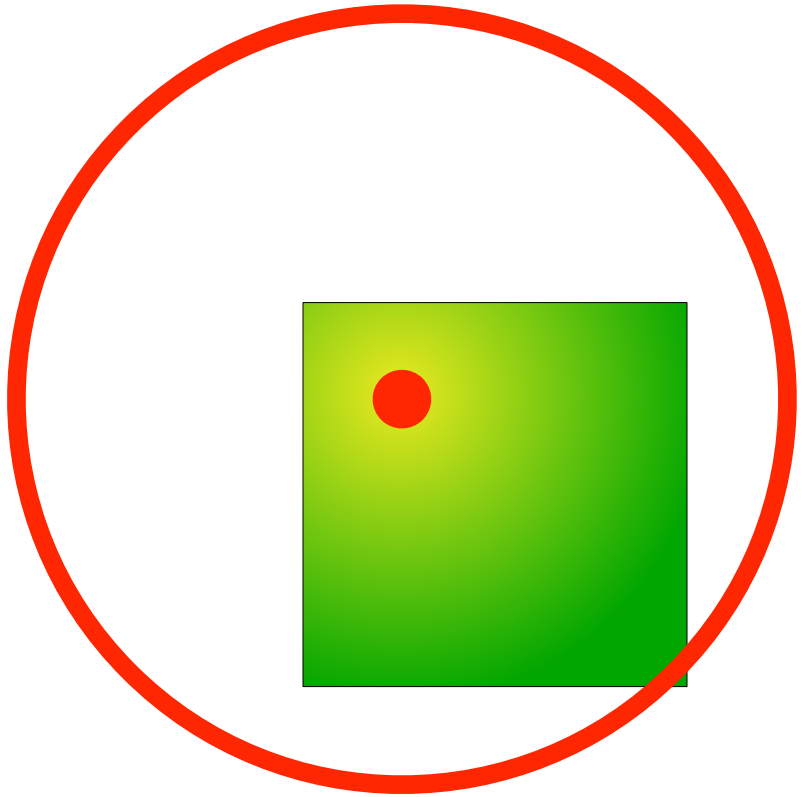
Right bottom will center the radial-gradient in the right bottom corner of the container.



Option 4: length or percent value

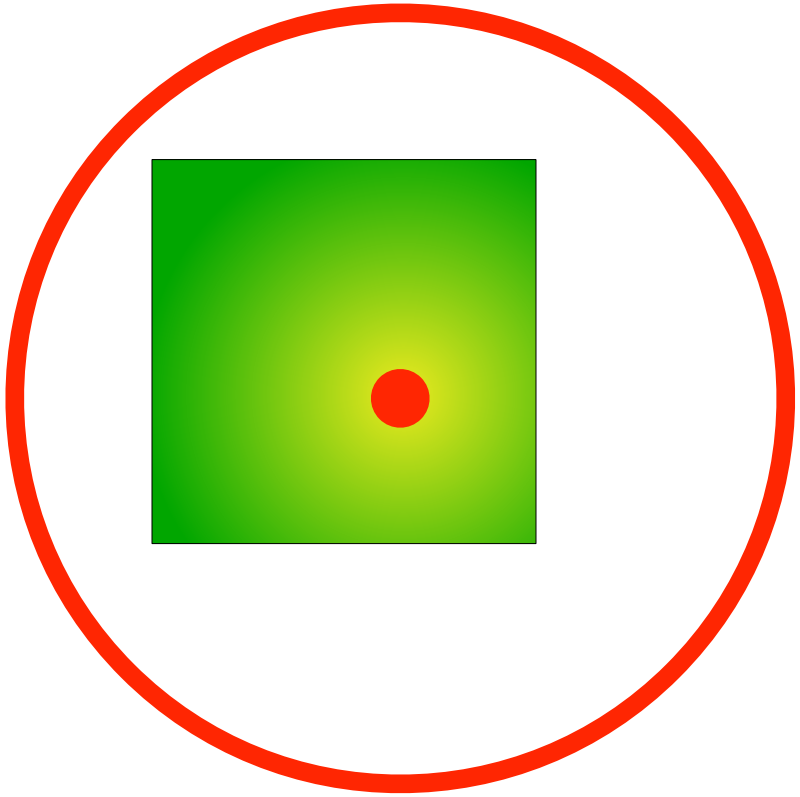
The center of the radial-gradient can be specified using a percentage value or a length value:

%, em, ex, px, inch, cm, mm, pt or pc



20px 20px

60% 60%



There must be a **comma placed after** the center value/s.

```
.test {
    background-image:
        -webkit-radial-gradient(
            left center,
        );
    background-image:
        -moz-radial-gradient(
            left center,
        );
}
```

Defining the shape and size

The **shape and size values are combined together** before a comma. We will look at the possible shape options first.

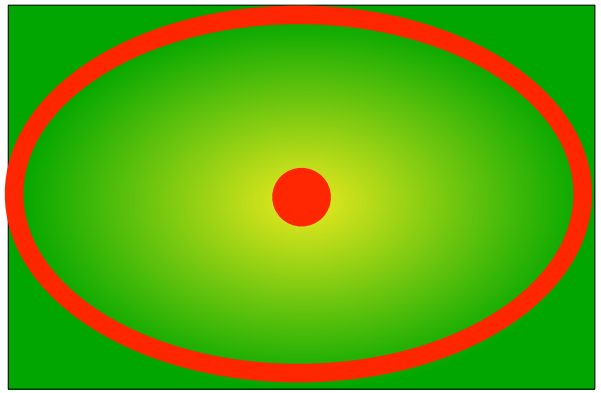
```
.test {
    background-image:
        -webkit-radial-gradient(
            left center,
            <shape> <size>,
        );
    background-image:
        -moz-radial-gradient(
            left center,
            <shape> <size>,
        );
}
```

Shape

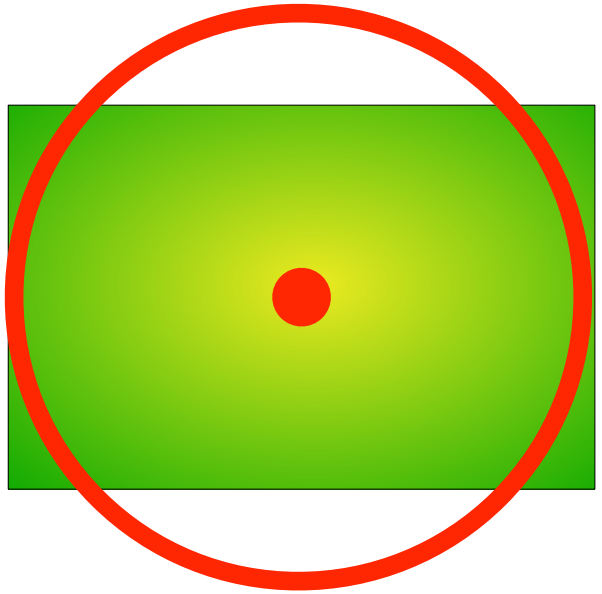
The <shape> can be defined using one of two possible keywords.

ellipse, circle

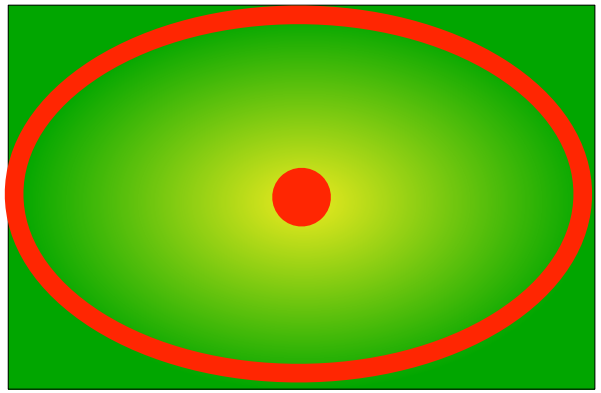
The **ellipse** shape option will create a shape that will spread to fit the dimensions of the container



The **circle** shape option will create a circle regardless of the dimensions of the container



The <shape> value can be left **undefined** and the shape will be the initial value, which is <ellipse>.

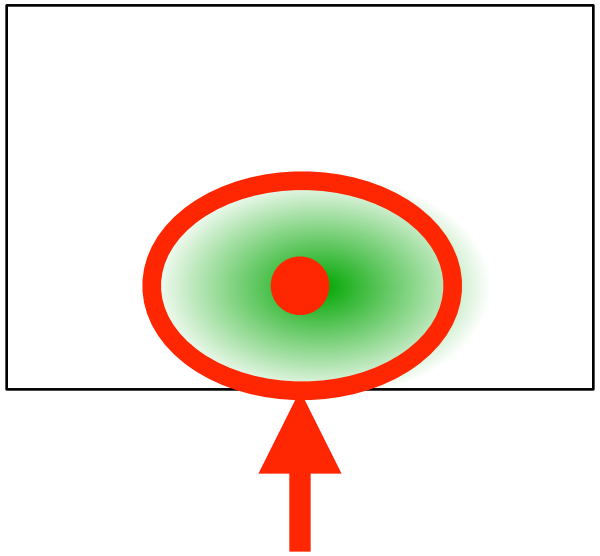


Size

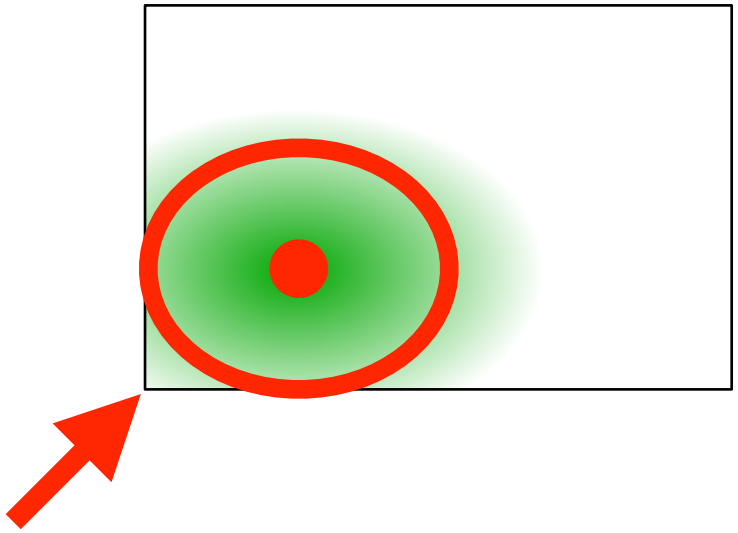
The <size> is can be defined using one of five possible keywords.

closest-side, closest-corner, farthest-side, farthest-corner, contain, cover

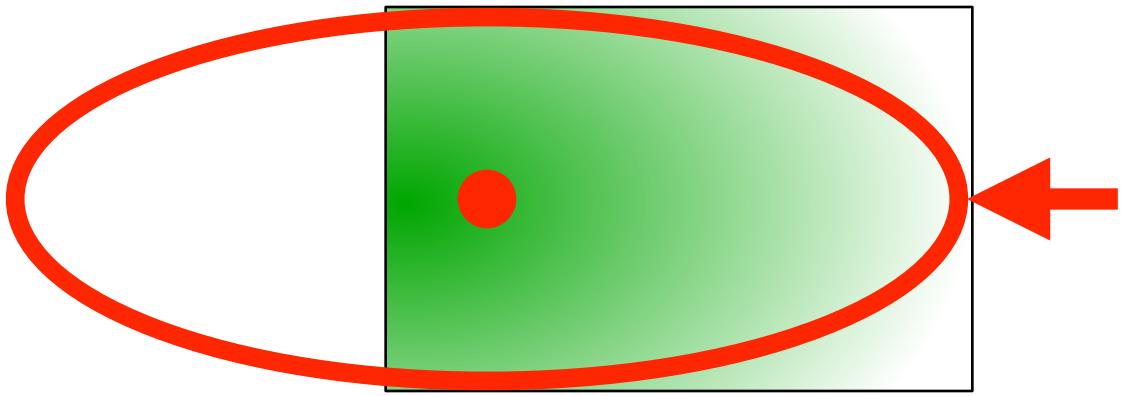
The **closest-side** value will force the ellipse to be complete when it hits the closest side.



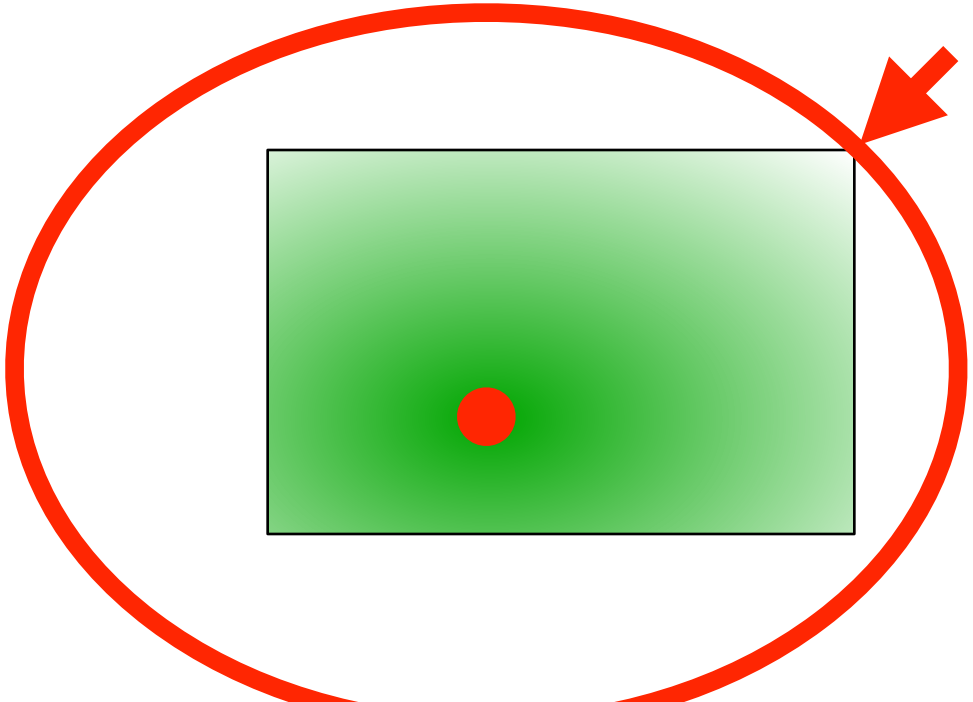
The **closest-corner** value will force the ellipse to be complete when it hits the closest corner.



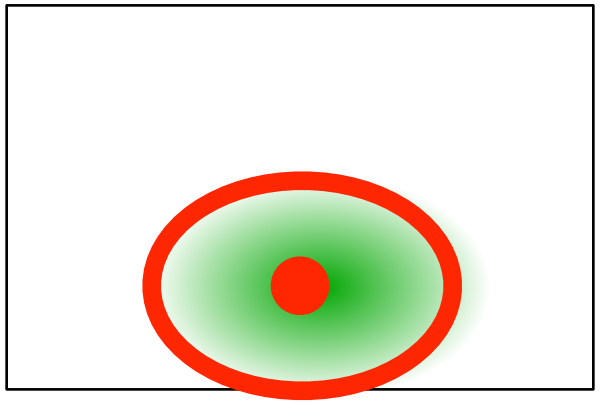
The **farthest-side** value will force the ellipse to be complete when it hits the farthest side.



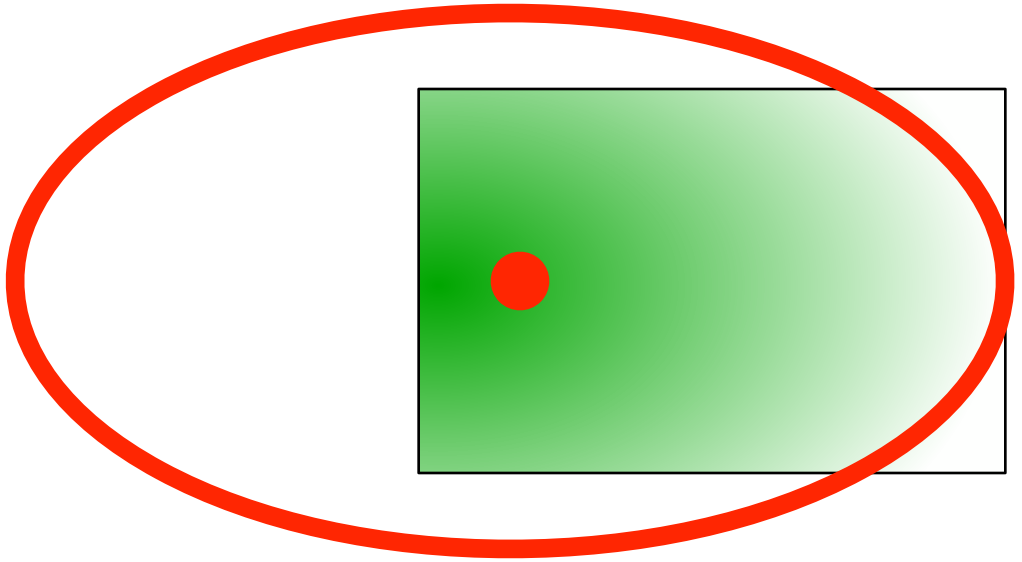
The **farthest-corner** will force the ellipse to be complete when it hits the farthest corner.



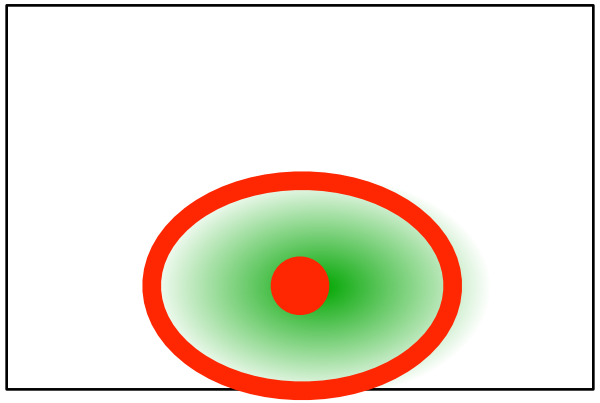
The **contain** value will contain the entire ellipse within the background area.



The **cover** value will cover the background with the ellipse's smallest measurement (either width or height).



The <size> value can be left **undefined** if you are happy for the size to be the initial value, which is cover.



```
.test {
    background-image:
        -webkit-radial-gradient(
            left center,
            ellipse cover,
        );
    background-image:
        -moz-radial-gradient(
            left center,
            ellipse cover,
        );
}
```

Defining the start color-stops

Color-stops can be defined using a color and an optional position. If present, the position can be defined as a percentage or length value.

<color> [<percentage> or <length>]

All color-stops **require a comma after the color and optional position** - except for the end color-stop.

Color

Color-stops can be specified using one of six different methods:

keyword
hexadecimal notation
RGB/RGBA numeric notation
RGB/RGBA percentage notation
HSL notation
HSLA notation

Position

Position can be specified using a **positive or negative percentage value** such as:

0deg, 50deg or -120deg

Position can also be specified using a **positive or negative length value**:

em, ex, px, inch, cm, mm, pt or pc

Position can be specified using **no position value at all**. If the first color-stop does not have a position, its position is set to 0%.

```
.test {
    background-image:
        -webkit-radial-gradient(
            left center,
            ellipse cover,
            red,
        );
    background-image:
        -moz-radial-gradient(
            left center,
            ellipse cover,
            red,
        );
}
```

Define the end color-stop

Like the start color-stop, **the end color-stop can be defined using a color and an optional position**. If the last color-stop does not have a position, its position is set to 100%. The end color-stop should not have a trailing comma.

```
.test {
    background-image:
        -webkit-radial-gradient(
            left center,
            ellipse cover,
            red,blue
        );
    background-image:
        -moz-radial-gradient(
            left center,
            ellipse cover,
            red,blue
        );
}
```

The minimal option

It can **seem daunting** to have to define up to five values, such as:

<shape> <size>
<start color-stop>
<end color-stop>

```
.test {
    background-image:
        -webkit-radial-gradient(
            <center>,
            <shape> <size>,
            <start color-stop>,
            <end color-stop>
        );
}
```

However, three of these five values have initial values (values that will be used if they are not defined by the author), so **they do not have to be defined**.

<shape> <size>

```
.test {
    background-image:
        -webkit-radial-gradient(
            [center center],
            [ellipse] [contain],
            <start color-stop>,
            <end color-stop>
        );
}
```

This means that if you are happy with these initial values, **you only need to define two values**:

<start color-stop>
<end color-stop>

```
.test {
    background-image:
        -webkit-radial-gradient(
            [center center],
            [ellipse] [contain],
            red,
            blue
        );
}
```

You can add other values, **but only when you need to over-ride the initial values**. For example, you may be happy with all initial values, but you want the radial-gradient to be a circle…

```
.test {
    background-image:
        -webkit-radial-gradient(
            [center center],
            circle [contain],
            red,
            blue
        );
}
```

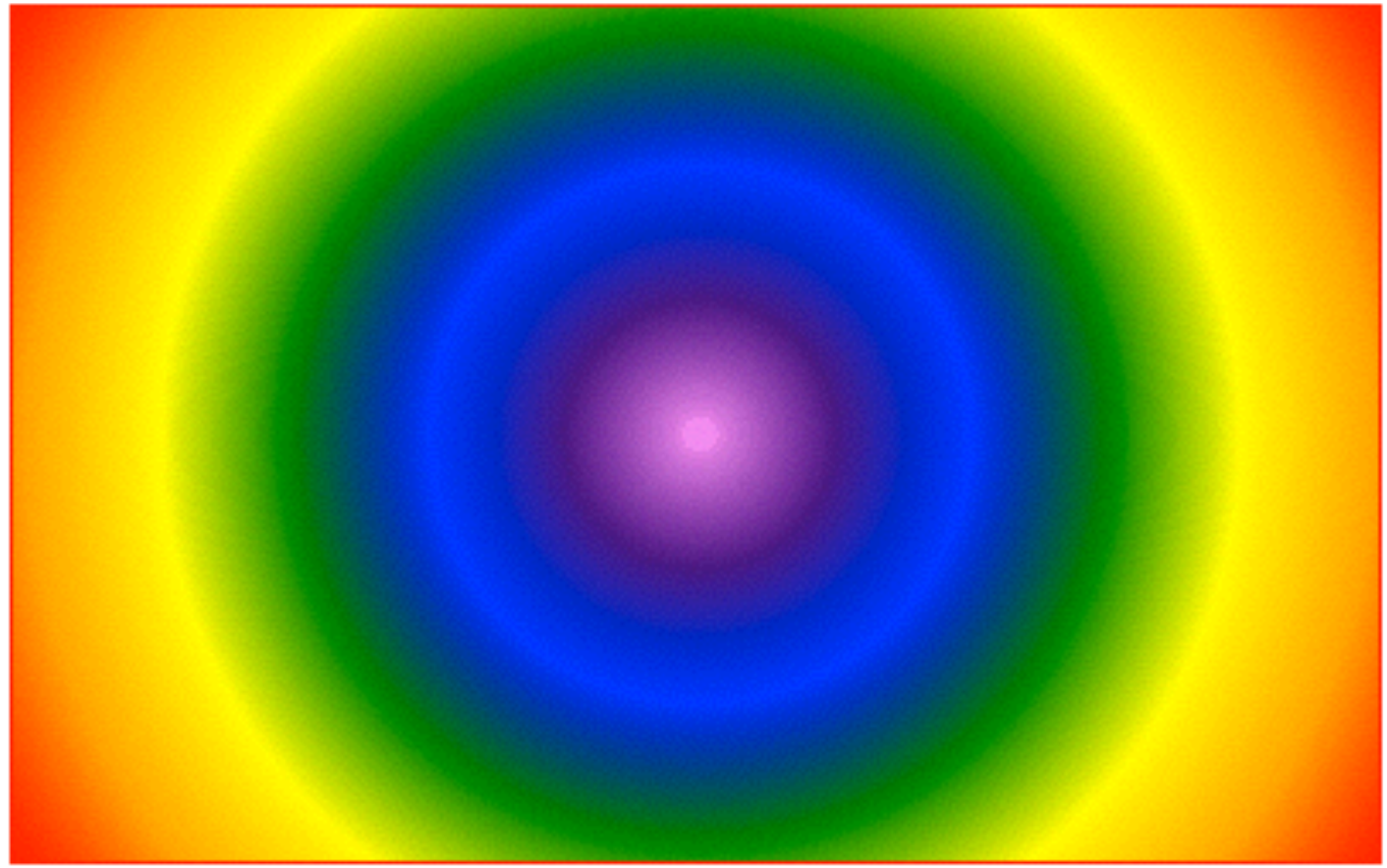
Add color-stops as needed

You can add **as many color-stops as you need** along a gradient path.

If no position is defined for these color stops, the browser will **equally space all color-stops** along the linear-gradient line.

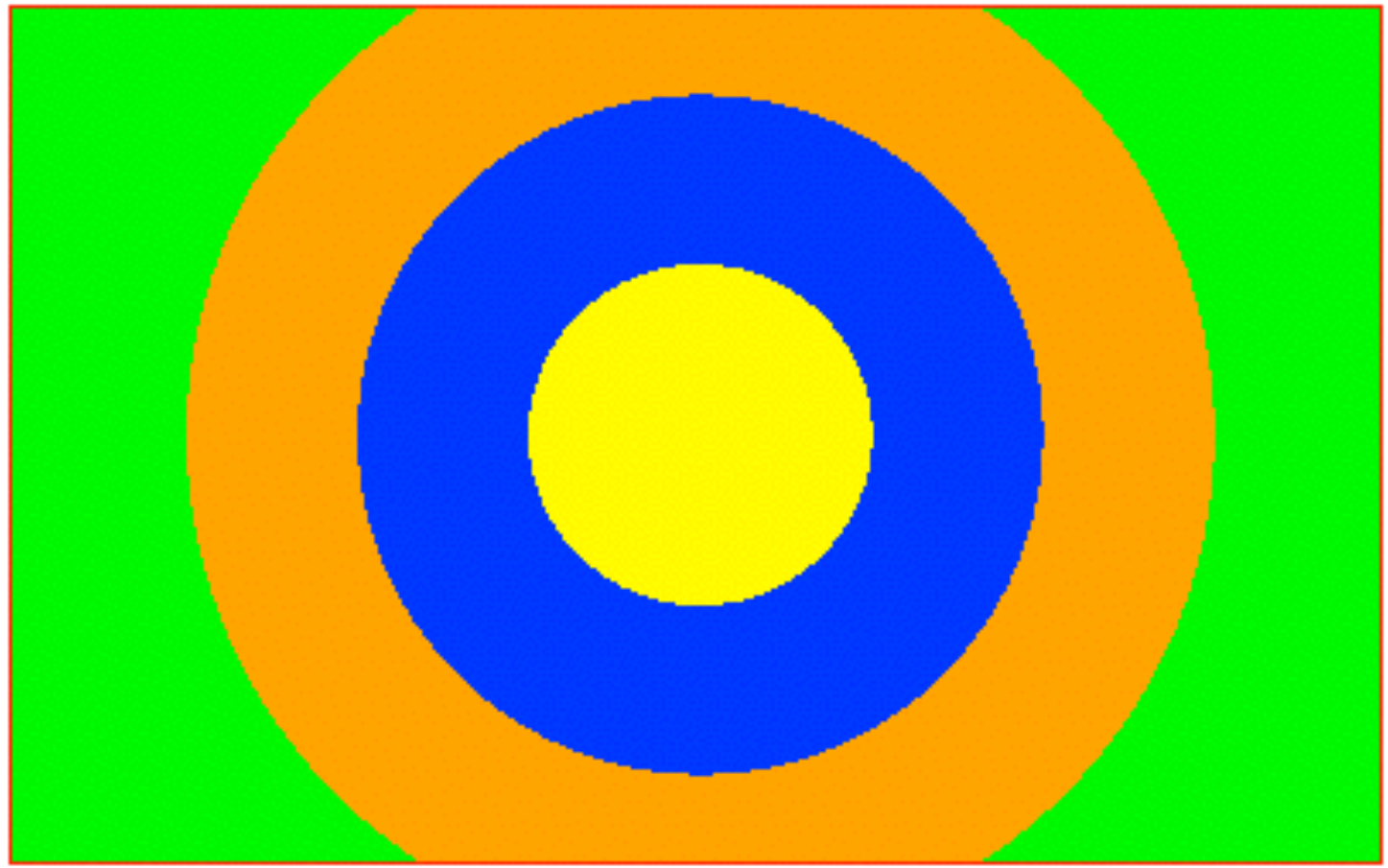
```
.test {
    background-image:
        -webkit-radial-gradient(
            left center,
            ellipse cover,
            red,white 40%,blue
        );
    background-image:
        -moz-radial-gradient(
            left center,
            ellipse cover,
            red,white 40%,blue
        );
}
```

Can you make a rainbow?



```
.test {
    background-image:
        -webkit-radial-gradient(
            center center,
            circle cover,
violet,indigo,blue,green,yellow,orange,red
        );
    background-image:
        -moz-radial-gradient(
            center center,
            circle cover,
violet,indigo,blue,green,yellow,orange,red
        );
}
```

Can you make a hard edged gradient?



```
.test
{
    background-image:
        linear-gradient(
        yellow 50px,
        blue 50px, blue 100px,
        orange 100px, orange 150px,
        lime 150px, lime 200px
    );
}
```

Browser support

CSS Gradients - CR

Global 90.06% + 0.3% = 90.36%

unprefixed: 79.48%

Method of defining a linear or radial color gradient as a CSS image.

Current aligned | Usage relative | Show all

IE	Edge *	Firefox	Chrome	Safari	Opera	iOS Safari *	Opera Mini *	Android Browser *	Chrome for Android
								4.1	
8			43					4.3	
9		40	44					4.4	
10		41	45	8		8.4		4.4.4	
11	12	42	46	9	32	9.1	8	44	46
	13	43	47		33				
		44	48		34				
		45	49						

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