## 4.7 Geometry
几何属性

### 4.7.1 Width

**/tcb/width**=⟨*length*⟩ (no default, initially \linewidth)

Sets the total width of the colored box to ⟨*length*⟩. See also **/tcb/height**→P. ??.

将盒子的总宽度设置为 ⟨*length*⟩。另见 **/tcb/height**→P. ??。

```
\tcbset{colback=red!5!white,colframe=red!75!black}

\begin{tcolorbox}[width=\linewidth/2]
这是一个\textbf{tcolorbox}.
\end{tcolorbox}
```

这是一个 **tcolorbox**.

**N** 2014-10-31 **/tcb/text width**=⟨*length*⟩ (style, no default)

Sets the text width of the upper part to ⟨*length*⟩. See also **/tcb/text height**→P. ??.

将 upper 部分的文本宽度设置为 ⟨*length*⟩. 另见 **/tcb/text height**→P. ??.

```
\tcbset{colback=red!5!white,colframe=red!75!black}

\begin{tcolorbox}[text width=4cm]
This is a \textbf{tcolorbox} where the text has a width of 4cm.
\end{tcolorbox}
```

This is a **tcolorbox** where the text has a width of 4cm.

**N** 2014-11-07 **/tcb/add to width**=⟨*length*⟩ (style, no default)

Adds ⟨*length*⟩ to the current total width of the colored box.

将当前盒子的总宽度增加 ⟨*length*⟩ 。

```
\tcbset{width=4cm,colback=red!5!white,
colframe=red!75!black}

\begin{tcolorbox}
这是一个\textbf{tcolorbox}.
\end{tcolorbox}

\begin{tcolorbox}[add to width=1cm]
这是一个\textbf{tcolorbox}.
\end{tcolorbox}
```

这是一个 **tcolor-box**.

这是一个 **tcolorbox**.

See **??** on page **??** for setting fixed height values.

有关设置固定高度值的问题，请参阅 **??** on page **??**。

### 4.7.2 Rules
线

**/tcb/toprule**=⟨*length*⟩ (no default, initially 0.5mm)

设置顶边框线的宽度为 ⟨*length*⟩。 Sets the line width of the top rule to ⟨*length*⟩.

```
\tcbset{colback=red!5!white,colframe=red!75!black}

\begin{tcolorbox}[toprule=3mm]
这是一个\textbf{tcolorbox}.
\end{tcolorbox}
```

这是一个 **tcolorbox**.

**/tcb/bottomrule**=⟨*length*⟩ (no default, initially 0.5mm)

设置底边框线的宽度为 ⟨*length*⟩。 Sets the line width of the bottom rule to ⟨*length*⟩.

```
\tcbset{colback=red!5!white,colframe=red!75!black}

\begin{tcolorbox}[bottomrule=3mm]
这是一个\textbf{tcolorbox}.
\end{tcolorbox}
```

这是一个 **tcolorbox**.

**/tcb/leftrule**=⟨*length*⟩ (no default, initially 0.5mm)

设置左边框线的宽度为 ⟨*length*⟩。 Sets the line width of the left rule to ⟨*length*⟩.

```
\tcbset{colback=red!5!white,colframe=red!75!black}

\begin{tcolorbox}[leftrule=3mm]
这是一个\textbf{tcolorbox}.
\end{tcolorbox}
```

这是一个 **tcolorbox**.

**/tcb/rightrule**=⟨*length*⟩ (no default, initially 0.5mm)

设置右边框线的宽度为 ⟨*length*⟩。 Sets the line width of the right rule to ⟨*length*⟩.

```
\tcbset{colback=red!5!white,colframe=red!75!black}

\begin{tcolorbox}[rightrule=3mm]
这是一个\textbf{tcolorbox}.
\end{tcolorbox}
```

这是一个 **tcolorbox**.

**/tcb/titlerule**=⟨*length*⟩ (no default, initially 0.5mm)

Sets the line width of the rule below the title to ⟨*length*⟩.
设置标题文本下方的线的宽度为 ⟨*length*⟩。

```latex
\tcbset{enhanced,colback=red!5!white,colframe=red!75!black,
colbacktitle=red!90!black}

\begin{tcolorbox}[titlerule=3mm,title=This is the title]
这是一个\textbf{tcolorbox}.
\end{tcolorbox}
```

> **This is the title**
>
> 这是一个 **tcolorbox**.

---

**/tcb/boxrule**=⟨*length*⟩        (style, no default, initially 0.5mm)

Sets all rules of the frame to ⟨*length*⟩, i.e. **/tcb/toprule**[→P.1], **/tcb/bottomrule**[→P.2], **/tcb/leftrule**[→P.2], **/tcb/rightrule**[→P.2], and **/tcb/titlerule**[→P.2].
设置所有的边框线的宽度为 ⟨*length*⟩[1]。

```latex
\tcbset{colback=red!5!white,colframe=red!75!black}

\begin{tcolorbox}[boxrule=3mm]
这是一个\textbf{tcolorbox}.
\end{tcolorbox}
```

> 这是一个 **tcolorbox**.

> **!** More options for drawing a **/tcb/borderline**[→P.??] are provided by using skins documented in Section **??** from page **??**.
> 更多的关于绘制 **/tcb/borderline**[→P.??] 的选项的描述在 skins 的文档中，详见 **??** 页的 **??** 小节。

### 4.7.3 弧线

**/tcb/arc**=⟨*length*⟩        (no default, initially 1mm)

设置边框的四个角落的弧的内半径。Sets the inner radius of the four frame arcs to ⟨*length*⟩.

```latex
\tcbset{colback=red!5!white,colframe=red!75!black}
\begin{tcolorbox}[arc=0mm]
\verb|arc=0mm|的效果
\end{tcolorbox}
```

> arc=0mm 的效果

```latex
\tcbset{colback=red!5!white,colframe=red!75!black}
\begin{tcolorbox}[arc=3mm]
\verb|arc=3mm|的效果
\end{tcolorbox}
```

> arc=3mm 的效果

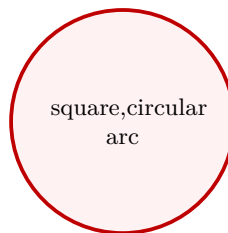**N** 2015-05-05    **/tcb/circular arc**        (style, no value)

Sets **/tcb/arc** to match the half of the inner width of the colored box. If width and height of the box are identical, this gives a circle.

---

[1]i.e. **/tcb/toprule**[→P.1], **/tcb/bottomrule**[→P.2], **/tcb/leftrule**[→P.2], **/tcb/rightrule**[→P.2], 和 **/tcb/titlerule**[→P.2].

将 `/tcb/arc` 设置为盒子内部宽度的一半。如果盒子的宽度和高度相同，就会得到一个圆。

> **!** If the height of the box is smaller than the width, the result will look quite ugly.
> 如果盒子的高度小于宽度，结果看起来会很难看。

```
\begin{tcolorbox}[width=3cm,
colback=red!5!white,
colframe=red!75!black,
halign=center,valign=center,
square,circular arc]
square,circular arc
\end{tcolorbox}
```

square,circular
arc

如果还设置了标题，会怪怪的

*—virhuiai*

```
\begin{tcolorbox}[width=3cm,
colback=red!5!white,
colframe=red!75!black,
halign=center,valign=center,
square,circular arc
,title=test]
square,circular arc
\end{tcolorbox}
```

test

square,circular
arc
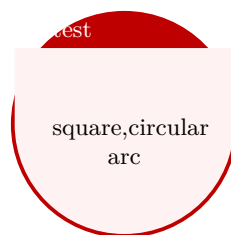
**/tcb/bean arc** (style, no value)

Sets `/tcb/arc`→P.3 to match the smaller value of the half of the inner width and of the inner height of the colored box.
将 `/tcb/arc`→P.3设置为盒子内宽度一半和高度一半的较小值。

> **!** This only works for a fixed **/tcb/height**→P.??. Also, **/tcb/bean arc** must be used *after* width and height are set by option keys.
> 这仅适用于固定的 **/tcb/height**→P.??。另外， **/tcb/bean arc**必须在宽度和高度选项设置之后使用。

```
\tcbset{size=fbox,boxrule=0.5mm,
colback=red!5!white,
colframe=red!75!black,
halign=center,valign=center}

\begin{tcolorbox}[width=3cm,height=2cm,
bean arc]
Box A
\end{tcolorbox}

\begin{tcolorbox}[width=2cm,height=3cm,
bean arc]
Box B
\end{tcolorbox}
```

Box A

Box B
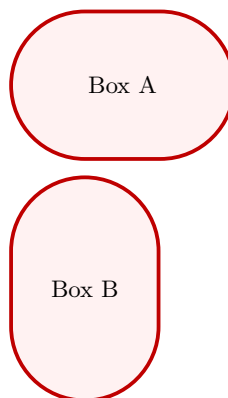
**/tcb/octogon arc** (style, no value)

Sets `/tcb/arc`→P.3 to match $\frac{1}{2+\sqrt{2}}$ of the inner width of the colored box. If width and height of the box are identical, the interior is a regular octogon.
将 `/tcb/arc`→P.3设置为盒子的内部宽度的 $\frac{1}{2+\sqrt{2}}$。如果盒子的宽度和高度相同，则内部是

一个正八边形。

```
\begin{tcolorbox}[enhanced,% 启用高级选项。
size=minimal,%去除默认边距，仅显示框体。
auto outer arc,% 自动调整外部圆角半径以适应框体大小。
width=2.1cm,
octogon arc,% 外部圆角为八角形。
colback=red,% 背景色为红色。
colframe=white,% 边框颜色为白色。
colupper=white,% 文字颜色为白色。
fontupper=\fontsize{7mm}{7mm}\selectfont\bfseries\sffamily,
%文字大小为7毫米，粗体，无衬线字体。
halign=center,% 水平居中对齐
valign=center,%垂直居中对齐。
square,% square: 边框为直角。
arc is angular,% arc is angular: 内部圆角为直角。
borderline={0.2mm}{-1mm}{red}
%使用红色的0.2毫米线条作为边框，内部偏移1毫米。
]
STOP
\end{tcolorbox}
```

**N** 2015-05-05    **/tcb/arc is angular**                              (no value, initially unset)

Using this options applies a patch which straightens the corners arcs of the boxes. The little arcs are replaced by little straight lines.
使用此选项将应用一个补丁，使盒子的角弧线变直。小弧线将被小直线替换。

> **!** This patch is considered as an experimental feature. It changes some of the original TikZ code. This change may break with future updates of TikZ.
> 这个补丁被视为一项实验性的功能。它改变了一些原始的 TikZ 代码。这种改变可能会在未来的 TikZ 更新中出现问题。

```
\tcbset{colback=red!5!white,%
colframe=red!75!black,%
arc=3mm}

\begin{tcolorbox}[arc is angular]
arc is angular.
\end{tcolorbox}
\begin{tcolorbox}[arc is curved]
arc is curved
\end{tcolorbox}
```

> arc is angular.
>
> arc is curved

**N** 2015-05-05    **/tcb/arc is curved**                              (no value, initially set)

This option resets the patch from **/tcb/arc is angular**. The original TikZ code is activated.
此选项将重置 **/tcb/arc is angular** 所设置的修补程序。原始的 TikZ 代码将被激活。
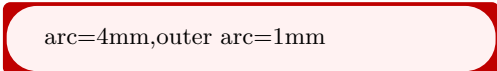
**/tcb/outer arc**=⟨*length*⟩                              (no default, initially unset)

Sets the outer radius of the four frame arcs to ⟨*length*⟩.
设置盒子四个角的弧的外半径为 ⟨*length*⟩。

```
\tcbset{colback=red!5!white,%
colframe=red!75!black}
\begin{tcolorbox}[]
这是一个\textbf{tcolorbox}.
\end{tcolorbox}
```

> 这是一个 **tcolorbox**.

```
\tcbset{colback=red!5!white,%
colframe=red!75!black}
\begin{tcolorbox}[arc=4mm]
arc=4mm
\end{tcolorbox}
```

arc=4mm

```
\tcbset{colback=red!5!white,%
colframe=red!75!black}
\begin{tcolorbox}[arc=4mm,%
outer arc=1mm]
arc=4mm,outer arc=1mm
\end{tcolorbox}
```

arc=4mm,outer arc=1mm

**/tcb/auto outer arc**                                            (no value, initially set)

Sets the outer radius of the four frame arcs automatically in dependency of the inner radius given by **/tcb/arc**$^{\rightarrow\text{P. 3}}$.
根据 **/tcb/arc**$^{\rightarrow\text{P. 3}}$ 给出的内部半径自动设置外部半径。

```
\tcbset{colback=red!5!white,%
colframe=red!75!black}
\begin{tcolorbox}[arc=4mm]
arc=4mm
\end{tcolorbox}
```

arc=4mm

```
\tcbset{colback=red!5!white,%
colframe=red!75!black}
\begin{tcolorbox}[arc=4mm,%
outer arc=1mm]
arc=4mm,outer arc=1mm
\end{tcolorbox}
```

arc=4mm,outer arc=1mm

```
\tcbset{colback=red!5!white,%
colframe=red!75!black}
\begin{tcolorbox}[arc=4mm,%
auto outer arc]
\verb|arc=4mm,auto outer arc|
\end{tcolorbox}
```

arc=4mm,auto outer arc

```
\tcbset{colback=red!5!white,%
colframe=red!75!black}
\begin{tcolorbox}[arc=4mm,%
outer arc=9mm]
\verb|arc=4mm,outer arc=9mm|
\end{tcolorbox}
```

arc=4mm,outer arc=9mm

```
\tcbset{colback=red!5!white,%
colframe=red!75!black}
\begin{tcolorbox}[arc=4mm,%
outer arc=0.1mm]
\verb|arc=4mm,outer arc=0.1mm|
\end{tcolorbox}
```

arc=4mm,outer arc=0.1mm
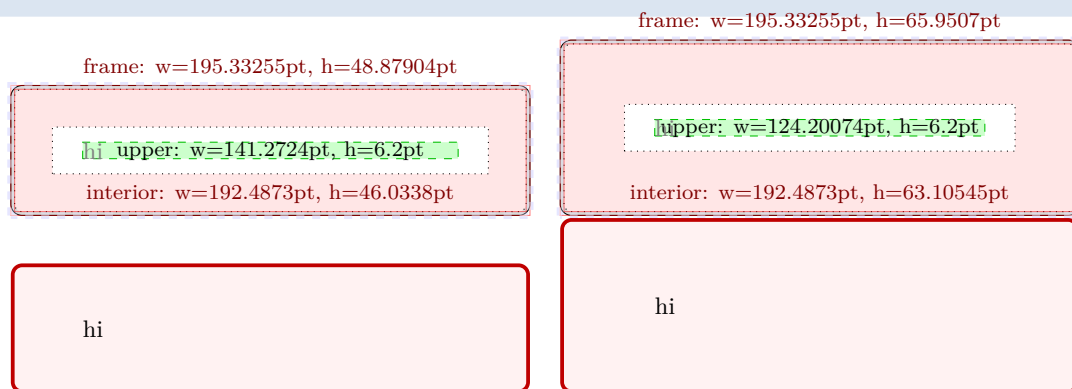
### 4.7.4  Spacing                                                                    间隔

**/tcb/boxsep**=⟨*length*⟩                                        (no default, initially 1mm)

Sets a common padding of ⟨*length*⟩ between the text content and the frame of the box. This value is added to the key values of `left`, `right`, `top`, `bottom`, and `middle` at the appropriate places.

在文本内容和盒子边框之间设置一个共同的填充 ⟨*length*⟩。这个值会添加到 `left`、`right`、`top`、`bottom` 和 `middle` 的关键值中，在适当的位置使用。

```
\tcbset{colback=red!5!white,colframe=red!75!black,width=(\linewidth-4mm)/2,↩
      ↪before=,after=\hfill}

\begin{tcolorbox}[boxsep=5mm,draft]
hi
\end{tcolorbox}
\begin{tcolorbox}[boxsep=8mm,draft]
hi
\end{tcolorbox}
\begin{tcolorbox}[boxsep=5mm]
hi
\end{tcolorbox}
\begin{tcolorbox}[boxsep=8mm]
hi
\end{tcolorbox}
```

frame: w=195.33255pt, h=65.9507pt

frame: w=195.33255pt, h=48.87904pt

upper: w=124.20074pt, h=6.2pt

hi upper: w=141.2724pt, h=6.2pt

interior: w=192.4873pt, h=46.0338pt

interior: w=192.4873pt, h=63.10545pt

hi

hi

**/tcb/left**=⟨*length*⟩                                      (style, no default, initially 4mm)

Sets the left space between all text parts and frame (additional to `boxsep`). This is an abbreviation for setting `lefttitle`, `leftupper`, and `leftlower` to the same value.

设置所有文本部分和盒子间的左边距（除了`boxsep` 之外）。这是设置`lefttitle`、`leftupper` 和`leftlower` 为相同值的简写方式。

```
\tcbset{colback=red!5!white%
,colframe=red!75!black
% ,width=(\linewidth-4mm)/2, ↵
    ↳before=,after=\hfill
}

\begin{tcolorbox}[left=0mm]
指定 \verb|left=0mm|
\end{tcolorbox}

\begin{tcolorbox}
使用默认
\end{tcolorbox}

\begin{tcolorbox}[left=4mm]
指定 \verb|left=4mm|
\end{tcolorbox}


\begin{tcolorbox}[left=10mm]
指定 \verb|left=10mm|
\end{tcolorbox}
```

> 指定 left=0mm

> 使用默认

> 指定 left=4mm

> 指定 left=10mm

---

**N** 2017-02-16    **/tcb/left\*=**⟨*length*⟩            (style, no default)

Sets **/tcb/left**[→P.7] such that ⟨*length*⟩ is the distance between the left bounding box and the text parts.

设置 **/tcb/left**[→P.7]，使得 ⟨*length*⟩ 为左边界框和文本部分之间的距离。

```
\tcbset{colback=red!5!white,colframe=red!75!black}

This is some text.

\begin{tcolorbox}[
enhanced,show bounding box]
默认情况
\end{tcolorbox}

\begin{tcolorbox}[left=0mm,
enhanced,show bounding box]
\verb|left=0mm|
\end{tcolorbox}

\begin{tcolorbox}[left*=0mm,
enhanced,show bounding box]
\verb|left*=0mm|
\end{tcolorbox}

\begin{tcolorbox}[grow to left by=5mm,
enhanced,show bounding box]
\verb|grow to left by=5mm|
\end{tcolorbox}

\begin{tcolorbox}[grow to left by=5mm,left*=0mm,
enhanced,show bounding box]
\verb|grow to left by=5mm,left*=0mm|
\end{tcolorbox}

\begin{tcolorbox}[grow to left by=5mm,left*=3mm,
enhanced,show bounding box]
\verb|grow to left by=5mm,left*=3mm|
\end{tcolorbox}
```

This is some text.

> 默认情况

> left=0mm

> left*=0mm

> grow to left by=5mm

> grow to left by=5mm,left*=0mm

> grow to left by=5mm,left*=3mm

**/tcb/lefttitle**=⟨*length*⟩        (no default, initially 4mm)

Sets the left space between title text and frame (additional to `boxsep`).
设置标题文本的左侧同边框的距离 (附加 `boxsep`)。

```
\tcbset{colback=red!5!white,colframe=red!75!black}

\begin{tcolorbox}[lefttitle=3cm,title=My Title]
这是一个\textbf{tcolorbox}.
\end{tcolorbox}
```

> **My Title**
>
> 这是一个 **tcolorbox**.

**/tcb/leftupper**=⟨*length*⟩                                    (no default, initially 4mm)

Sets the left space between upper text and frame (additional to boxsep).
设置 upper 部分同左侧边边框的距离 (附加 boxsep)。

```
\tcbset{colback=red!5!white,colframe=red!75!black}

\begin{tcolorbox}[leftupper=3cm,title=My Title]
这是一个\textbf{tcolorbox}.
\end{tcolorbox}
```

> **My Title**
>
> 这是一个 **tcolorbox**.

**/tcb/leftlower**=⟨*length*⟩                                    (no default, initially 4mm)

Sets the left space between lower text and frame (additional to boxsep).
设置 lower 部分同左侧边边框的距离 (附加 boxsep)。

```
\tcbset{colback=red!5!white,colframe=red!75!black}

\begin{tcolorbox}[leftlower=3cm]
这是一个\textbf{tcolorbox}.
\tcblower
这是lower部分。
\end{tcolorbox}
```

> 这是一个 **tcolorbox**.
> - - - - - - - - - - - - - - - - - - - - - - - - - - - -
> 这是 lower 部分。

**/tcb/right**=⟨*length*⟩                                 (style, no default, initially 4mm)

Sets the right space between all text parts and frame (additional to boxsep). This is an
abbreviation for setting righttitle, rightupper, and rightlower to the same value.
设置所有文本部分同右侧边框的距离 (附加 boxsep)。这是同时将 righttitle, rightupper,
和 rightlower 设置为同一个值的简写方式。

```latex
\tcbset{colback=red!5!white,colframe=red!75!black}

\begin{tcolorbox}[width=5cm,right=2cm]
这是一个\textbf{tcolorbox}.
\end{tcolorbox}
```

> 这是一个 **tcol-**
> **orbox**.

**/tcb/right\***=⟨*length*⟩  (style, no default)

Sets **/tcb/right**$^{\rightarrow\text{P.}\,10}$ such that ⟨*length*⟩ is the distance between the right bounding box and the text parts.

设置 **/tcb/right**$^{\rightarrow\text{P.}\,10}$ 的宽度 ⟨*length*⟩ 为盒子右边框同上下文文本的右侧的距离。

```latex
\tcbset{colback=red!5!white,colframe=red!75!black}

\flushright This is some text.
\begin{tcolorbox}[grow to right by=5mm,right*=0mm,
  halign=right,enhanced,show bounding box]
这是一个\textbf{tcolorbox}.
\end{tcolorbox}
```

> This is some text.
>
> 这 是 一 个 **tcolorbox**.

**/tcb/righttitle**=⟨*length*⟩  (no default, initially 4mm)

Sets the right space between title text and frame (additional to `boxsep`).

设置标题文本右侧同右边框的距离 (附加 `boxsep`)。

```latex
\tcbset{colback=red!5!white,colframe=red!75!black}

\begin{tcolorbox}[width=5cm,righttitle=2cm,title=My very long title text]
This is a \textbf{tcolorbox} with standard upper box dimensions.
\end{tcolorbox}
```

> My very long ti-
> tle text
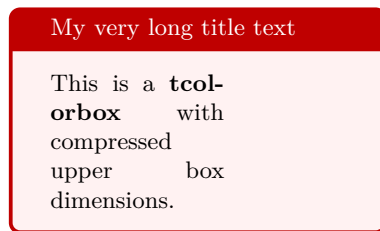>
> This is a **tcolorbox** with
> standard upper box dimen-
> sions.

**/tcb/rightupper**=⟨*length*⟩  (no default, initially 4mm)

Sets the right space between upper text and frame (additional to `boxsep`).

设置 upper 部分的文本同右边框的距离 (附加`boxsep`).

```
\tcbset{colback=red!5!white,colframe=red!75!black}

\begin{tcolorbox}[width=5cm,rightupper=2cm,title=My very long title text]
This is a \textbf{tcolorbox} with compressed upper box dimensions.
\end{tcolorbox}
```

> **My very long title text**
>
> This is a **tcol-orbox** with compressed upper box dimensions.

**/tcb/rightlower**=⟨*length*⟩                                    (no default, initially 4mm)

Sets the right space between lower text and frame (additional to `boxsep`).
设置 lower 部分的右边同右侧边框的距离 (附加 `boxsep`)。

```
\tcbset{colback=red!5!white,colframe=red!75!black}

\begin{tcolorbox}[width=5cm,rightlower=2cm]
This is a \textbf{tcolorbox} with standard upper box dimensions.
\tcblower
This is the lower part with large space at right.
\end{tcolorbox}
```

> This is a **tcolorbox** with standard upper box dimensions.
> ----------------------------------
> This is the lower part with large space at right.
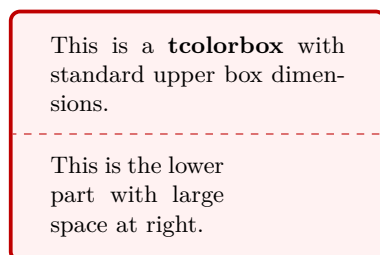
**/tcb/top**=⟨*length*⟩                                    (no default, initially 2mm)

Sets the top space between text and frame (additional to `boxsep`).
设置文本同上边框的距离 (附加 `boxsep`)。

```
\tcbset{colback=red!5!white,colframe=red!75!black%
,width=(\linewidth-4mm)/2
% ,nobeforeafter
, before=,after=\hfill
}

\begin{tcolorbox}[]
默认\verb|top=2mm|
\tcblower
这是lower部分。
\end{tcolorbox}
\begin{tcolorbox}[top=0mm]
\verb|top=0mm|
\tcblower
这是lower部分。
\end{tcolorbox}
```

| 默认top=2mm | top=0mm |
|---|---|
| 这是 lower 部分。 | 这是 lower 部分。 |

**/tcb/toptitle**=⟨*length*⟩ (no default, initially 0mm)

Sets the top space between title and frame (additional to `boxsep`).
设置标题文本同上边框的距离 (附加 `boxsep`)。

```
\tcbset{colback=red!5!white,colframe=red!75!black
,width=(\linewidth-4mm)/2
% ,nobeforeafter
, before=,after=\hfill}

\begin{tcolorbox}[toptitle=3mm,title=My title]
\verb|toptitle=3mm|
\end{tcolorbox}
\tcbset{colback=red!5!white,colframe=red!75!black}
%
\begin{tcolorbox}[title=My title]
默认\verb|toptitle=0mm|
\end{tcolorbox}
```

| My title | My title |
|---|---|
| toptitle=3mm | 默认toptitle=0mm |

**/tcb/bottom**=⟨*length*⟩ (no default, initially 2mm)

Sets the bottom space between text and frame (additional to `boxsep`).
设置文本底部同边框的距离 (附加 `boxsep`).

```
\tcbset{colback=red!5!white,colframe=red!75!black
,width=(\linewidth-4mm)/2
% ,nobeforeafter
, before=,after=\hfill}

\begin{tcolorbox}[bottom=0mm]
\verb|bottom=0mm|
\tcblower
这是lower部分。
\end{tcolorbox}
\begin{tcolorbox}
默认\verb|bottom=2mm|
\tcblower
这是lower部分。
\end{tcolorbox}
```

---

bottom=0mm

- - - - - - - - - - - - - - - - - - - - - - - - - - - -

这是 lower 部分。

---

默认bottom=2mm

- - - - - - - - - - - - - - - - - - - - - - - - - - - -

这是 lower 部分。

---

**/tcb/bottomtitle**=⟨*length*⟩                                          (no default, initially 0mm)

Sets the bottom space between title and frame (additional to `boxsep`).
设置标题同下方的边框的距离 (附加 `boxsep`).

```
\tcbset{colback=red!5!white,colframe=red!75!black
,width=(\linewidth-4mm)/2
% ,nobeforeafter
, before=,after=\hfill}

\begin{tcolorbox}[bottomtitle=3mm,title=My title]
\verb|bottomtitle=3mm|
\end{tcolorbox}
\begin{tcolorbox}[title=My title]
默认\verb|bottomtitle=0mm|
\end{tcolorbox}
```

---

My title

bottomtitle=3mm

---

My title

默认bottomtitle=0mm

---

**/tcb/middle**=⟨*length*⟩                                          (no default, initially 2mm)

Sets the space between upper and lower text to the separation line (additional to `boxsep`).
设置上下文本同分隔线的距离 (附加 `boxsep`)。

```
\tcbset{colback=red!5!white,colframe=red!75!black,width=(\linewidth-4mm)/3
% ,nobeforeafter
, before=,after=\hfill}

\begin{tcolorbox}
默认\verb|middle=2mm|
\tcblower
这是lower部分。
\end{tcolorbox}
\begin{tcolorbox}[boxsep=0mm]
\verb|boxsep=0mm|
\tcblower
这是lower部分。
\end{tcolorbox}
\begin{tcolorbox}[middle=0mm,boxsep=0mm]
\verb|middle=0mm,boxsep=0mm|
\tcblower
这是lower部分。
\end{tcolorbox}
```

默认middle=2mm

这是 lower 部分。

boxsep=0mm

这是 lower 部分。

middle=0mm,boxsep=0mm
这是 lower 部分。

### 4.7.5 Size Shortcuts
### 调整尺寸的快捷方式

**/tcb/size**=⟨*name*⟩                                                        (no default, initially `normal`)

Sets all geometry keys with exception of **/tcb/width**[→P.1] to predefined length values.
For ⟨*name*⟩, the following values are feasible:
将除 **/tcb/width**[→P.1] 外的所有尺寸设置为预定义的值。可选的 ⟨*name*⟩ 值有：

**normal**   normal sized boxes e.g. of width \linewidth.
             常用的盒子尺寸 e.g. 宽度为 \linewidth。
**title**    title line sized boxes.
             宽度同标题行一致。
**small**    small boxes e.g. for keyword highlighting.
             小一些的盒子 e.g. 用于关键字的高亮。
**fbox**     identical to the standard \fbox.
             同使用 \fbox 一样。
**tight**    no padding space at all.
             完全没有填充空间。
**minimal**  no padding space, no box rules.
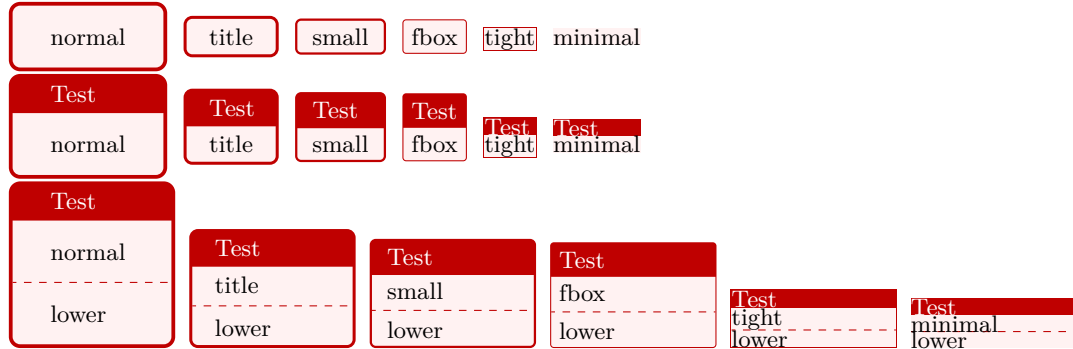             没有填充空间，没有边框。

```latex
\tcbset{colback=red!5!white,colframe=red!75!black}

\foreach \s in {normal,title,small,fbox,tight,minimal} {
  \tcbox[size=\s,on line]{\s} }

\foreach \s in {normal,title,small,fbox,tight,minimal} {
  \tcbox[size=\s,on line,title=Test]{\s} }

\foreach \s in {normal,title,small,fbox,tight,minimal} {
  \begin{tcolorbox}[size=\s,on line,title=Test,width=2.2cm]
    \s \tcblower lower\end{tcolorbox} }
```



| Predefined values | | | | | | |
|---|---|---|---|---|---|---|
|  | normal | title | small | fbox | tight | minimal |
| boxrule | 0.5mm | 0.4mm | 0.3mm | 0.4pt | 0.4pt | 0.0pt |
| boxsep | 1.0mm | 1.0mm | 1.0mm | 3.0pt | 0.0pt | 0.0pt |
| left | 4.0mm | 2.0mm | 1.0mm | 0.0pt | 0.0pt | 0.0pt |
| right | 4.0mm | 2.0mm | 1.0mm | 0.0pt | 0.0pt | 0.0pt |
| top | 2.0mm | 0.25mm | 0.0mm | 0.0pt | 0.0pt | 0.0pt |
| bottom | 2.0mm | 0.25mm | 0.0mm | 0.0pt | 0.0pt | 0.0pt |
| toptitle | 0.0mm | 0.0mm | 0.0mm | 0.0pt | 0.0pt | 0.0pt |
| bottomtitle | 0.0mm | 0.0mm | 0.0mm | 0.0pt | 0.0pt | 0.0pt |
| middle | 2.0mm | 0.75mm | 0.5mm | 1.0pt | 0.2pt | 0.0pt |
| arc | 1.0mm | 0.75mm | 0.5mm | 1.0pt | 0.0pt | 0.0pt |
| outer arc | auto | auto | auto | auto | 0.0pt | 0.0pt |

**/tcb/oversize**=⟨*length*⟩                                                   (style, default `0pt`)

Sets the text width of the upper part to the current line width plus an optional ⟨*length*⟩.
This is achieved by changing the keys **/tcb/width**→P. 1  **/tcb/enlarge left by**→P. ??,
and  **/tcb/enlarge right by**→P. ?? appropriately. The resulting box is overlapping
into the left and right margin of the page. Note that this style option has to be
given *after* all other geometry keys! Also see  **/tcb/grow sidewards by**→P. ?? and
**/tcb/spread sidewards**→P. ??.

将 upper 部分的文本宽度设置为当前行宽再加上可选的 ⟨*length*⟩。这是通过适当地更改键
**/tcb/width**→P. 1、 **/tcb/enlarge left by**→P. ?? 和 **/tcb/enlarge right by**→P. ?? 来实
现的。结果的框重叠到页面的左右边距上。请注意，这个样式选项必须在所有其他几何键之
后给出！还请参见 **/tcb/grow sidewards by**→P. ?? 和 **/tcb/spread sidewards**→P. ??。

```
\tcbset{colback=red!5!white,colframe=red!75!black,fonttitle=\bfseries}

\textit{用于比较的普通文本:}\\
\lipsum[2]

\begin{tcolorbox}[oversize,title=Oversized box]
\lipsum[2]
\end{tcolorbox}

\begin{tcolorbox}[title=Normal box]
\lipsum[2]
\end{tcolorbox}
```

*用于比较的普通文本:*
Nam dui ligula, fringilla a, euismod sodales, sollicitudin vel, wisi. Morbi auctor lorem non justo. Nam lacus libero, pretium at, lobortis vitae, ultricies et, tellus. Donec aliquet, tortor sed accumsan bibendum, erat ligula aliquet magna, vitae ornare odio metus a mi. Morbi ac orci et nisl hendrerit mollis. Suspendisse ut massa. Cras nec ante. Pellentesque a nulla. Cum sociis natoque penatibus et magnis dis parturient montes, nascetur ridiculus mus. Aliquam tincidunt urna. Nulla ullamcorper vestibulum turpis. Pellentesque cursus luctus mauris.

---

**Oversized box**

Nam dui ligula, fringilla a, euismod sodales, sollicitudin vel, wisi. Morbi auctor lorem non justo. Nam lacus libero, pretium at, lobortis vitae, ultricies et, tellus. Donec aliquet, tortor sed accumsan bibendum, erat ligula aliquet magna, vitae ornare odio metus a mi. Morbi ac orci et nisl hendrerit mollis. Suspendisse ut massa. Cras nec ante. Pellentesque a nulla. Cum sociis natoque penatibus et magnis dis parturient montes, nascetur ridiculus mus. Aliquam tincidunt urna. Nulla ullamcorper vestibulum turpis. Pellentesque cursus luctus mauris.

---

**Normal box**

Nam dui ligula, fringilla a, euismod sodales, sollicitudin vel, wisi. Morbi auctor lorem non justo. Nam lacus libero, pretium at, lobortis vitae, ultricies et, tellus. Donec aliquet, tortor sed accumsan bibendum, erat ligula aliquet magna, vitae ornare odio metus a mi. Morbi ac orci et nisl hendrerit mollis. Suspendisse ut massa. Cras nec ante. Pellentesque a nulla. Cum sociis natoque penatibus et magnis dis parturient montes, nascetur ridiculus mus. Aliquam tincidunt urna. Nulla ullamcorper vestibulum turpis. Pellentesque cursus luctus mauris.

### 4.7.6 Toggle Left and Right
### 左右设置切换

**U** 2017-02-16 **/tcb/toggle left and right**=⟨*toggle preset*⟩  (default evenpage, initially none)

According to the ⟨*toggle preset*⟩, the left and the right settings of the tcolorbox are switched or not. Feasible values are:
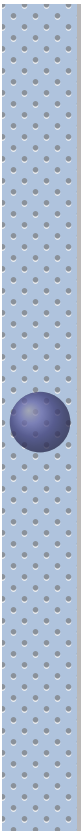
根据 ⟨*toggle preset*⟩，tcolorbox 的左右设置是否对换。可选的值有：

**none** no switching. 不对换。
**forced** the values of the left and right rules, spaces, and corners are switched. 左右的线、距离和四个角的设置互换。
**evenpage** if the page is an even page, the values of the left and right rules, spaces, and corners are switched. This value also sets **/tcb/check odd page**[→P. ??] to true. 偶数页的左右线条数值，距离和四个角的设置互换。此设置同时将 **/tcb/check odd page**[→P. ??] 设置为 true.

> **!** Horizontal bounding box enlargements are not toggled by this option. They can be toggled independently by **/tcb/toggle enlargement**<sup>→P.??</sup>. For example, **/tcb/oversize**<sup>→P.16</sup> changes the bounding box.
> 此选项不会将盒子的水平边框放大。它们可以通过 **/tcb/toggle enlargement**<sup>→P.??</sup> 独立地进行切换。例如，**/tcb/oversize**<sup>→P.16</sup> 更改盒子的的边界框。

```
% \usepackage{lipsum}
% \usetikzlibrary{patterns}
% \tcbuselibrary{skins,breakable}
\begin{tcolorbox}[enhanced,% 启用增强功能，支持更多的选项。
breakable,%当盒子过长时，可以自动分页。
toggle left and right,%使盒子可以在左右两侧切换。
sharp corners,% 使盒子的角变得尖锐。
boxrule=0mm,top=0mm,bottom=0mm,left=1mm,right=1mm,
rightrule=1cm,colupper=blue!25!black,
interior style={fill overzoom image=lichtspiel.jpg,fill image opacity=0.25},
frame style={pattern=crosshatch dots light steel blue},
overlay={%定义要在盒子上覆盖的内容，这里是一个填充球和一个交叉标记。
\begin{tcbclipframe}
\tcbifoddpage{\coordinate (X) at ([xshift=-5mm]frame.east);}
              {\coordinate (X) at ([xshift=5mm]frame.west);}
\fill[shading=ball,ball color=blue!50!white,opacity=0.5] (X) circle (4mm);
\end{tcbclipframe}}]
\lipsum[1-6]
\end{tcolorbox}
```

This example switches a `1cm` thick rule from the left to the right side depending on the page number. Thereby, the rule is always on the outer side of the double-sided paper. Additionally, a ball is drawn on the outer side with help of an overlay.

这个例子根据页面编号将厚度为`1cm` 的标尺从左侧移到右侧。因此，该标尺始终位于双面纸的外侧。此外，通过叠加层在外侧绘制一个球。

Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Ut purus elit, vestibulum ut, placerat ac, adipiscing vitae, felis. Curabitur dictum gravida mauris. Nam arcu libero, nonummy eget, consectetuer id, vulputate a, magna. Donec vehicula augue eu neque. Pellentesque habitant morbi tristique senectus et netus et malesuada fames ac turpis egestas. Mauris ut leo. Cras viverra metus rhoncus sem. Nulla et lectus vestibulum urna fringilla ultrices. Phasellus eu tellus sit amet tortor gravida placerat. Integer sapien est, iaculis in, pretium quis, viverra ac, nunc. Praesent eget sem vel leo ultrices bibendum. Aenean faucibus. Morbi dolor nulla, malesuada eu, pulvinar at, mollis ac, nulla. Curabitur auctor semper nulla. Donec varius orci eget risus. Duis nibh mi, congue eu, accumsan eleifend, sagittis quis, diam. Duis eget orci sit amet orci dignissim rutrum.

Nam dui ligula, fringilla a, euismod sodales, sollicitudin vel, wisi. Morbi auctor lorem non justo. Nam lacus libero, pretium at, lobortis vitae, ultricies et, tellus. Donec aliquet, tortor sed accumsan bibendum, erat ligula aliquet magna, vitae ornare odio metus a mi. Morbi ac orci et nisl hendrerit mollis. Suspendisse ut massa. Cras nec ante. Pellentesque a nulla. Cum sociis natoque penatibus et magnis dis parturient montes, nascetur ridiculus mus. Aliquam tincidunt urna. Nulla ullamcorper vestibulum turpis. Pellentesque cursus luctus mauris.

Nulla malesuada porttitor diam. Donec felis erat, congue non, volutpat at, tincidunt tristique, libero. Vivamus viverra fermentum felis. Donec nonummy pellentesque ante. Phasellus adipiscing semper elit. Proin fermentum massa ac quam. Sed diam turpis, molestie vitae, placerat a, molestie nec, leo. Maecenas lacinia. Nam ipsum ligula, eleifend at, accumsan nec, suscipit a, ipsum. Morbi blandit

ligula feugiat magna. Nunc eleifend consequat lorem. Sed lacinia nulla vitae enim. Pellentesque tincidunt purus vel magna. Integer non enim. Praesent euismod nunc eu purus. Donec bibendum quam in tellus. Nullam cursus pulvinar lectus. Donec et mi. Nam vulputate metus eu enim. Vestibulum pellentesque felis eu massa. Quisque ullamcorper placerat ipsum. Cras nibh. Morbi vel justo vitae lacus tincidunt ultrices. Lorem ipsum dolor sit amet, consectetuer adipiscing elit. In hac habitasse platea dictumst. Integer tempus convallis augue. Etiam facilisis. Nunc elementum fermentum wisi. Aenean placerat. Ut imperdiet, enim sed gravida sollicitudin, felis odio placerat quam, ac pulvinar elit purus eget enim. Nunc vitae tortor. Proin tempus nibh sit amet nisl. Vivamus quis tortor vitae risus porta vehicula.

Fusce mauris. Vestibulum luctus nibh at lectus. Sed bibendum, nulla a faucibus semper, leo velit ultricies tellus, ac venenatis arcu wisi vel nisl. Vestibulum diam. Aliquam pellentesque, augue quis sagittis posuere, turpis lacus congue quam, in hendrerit risus eros eget felis. Maecenas eget erat in sapien mattis porttitor. Vestibulum porttitor. Nulla facilisi. Sed a turpis eu lacus commodo facilisis. Morbi fringilla, wisi in dignissim interdum, justo lectus sagittis dui, et vehicula libero dui cursus dui. Mauris tempor ligula sed lacus. Duis cursus enim ut augue. Cras ac magna. Cras nulla. Nulla egestas. Curabitur a leo. Quisque egestas wisi eget nunc. Nam feugiat lacus vel est. Curabitur consectetuer.

Suspendisse vel felis. Ut lorem lorem, interdum eu, tincidunt sit amet, laoreet vitae, arcu. Aenean faucibus pede eu ante. Praesent enim elit, rutrum at, molestie non, nonummy vel, nisl. Ut lectus eros, malesuada sit amet, fermentum eu, sodales cursus, magna. Donec eu purus. Quisque vehicula, urna sed ultricies auctor, pede lorem egestas dui, et convallis elit erat sed nulla. Donec luctus. Curabitur et nunc. Aliquam dolor odio, commodo pretium, ultricies non, pharetra in, velit. Integer arcu est, nonummy in, fermentum faucibus, egestas vel, odio.

```
\setcounter{section}{4}
\setcounter{subsection}{7}
\setcounter{subsubsection}{6}
```