

Package ‘plotscale’

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Type Package

Title Scale Graphics Devices Using Plot Dimensions

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Description Figures rendered on graphics devices are usually rescaled to fit pre-determined device dimensions. 'plotscale' implements the reverse: desired plot dimensions are specified and device dimensions are calculated to accommodate marginal material, giving consistent proportions for plot elements. Default methods support grid graphics such as lattice and ggplot. See ```example('devsize')``` and ```vignette('plotscale')```.

Imports grid, graphics

License GPL-3

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VignetteBuilder knitr

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as.pdf	<i>Coerce to PDF</i>
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Description

Coerces to PDF. Generic, with default method.

Usage

```
as.pdf(x, ...)
```

Arguments

x	object
...	passed arguments

See Also

Other as.pdf: [as.pdf.default](#)

Other devices: [as.pdf.default](#), [as.png.default](#), [as.png](#)

Examples

```
example(as.pdf.default)
```

as.pdf.default	<i>Convert to PDF by Default</i>
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Description

Converts object to PDF. By default, device is scaled by plot size. Device is automatically closed and file argument is returned.

Usage

```
## Default S3 method:
as.pdf(x, width = getOption("plotscale_pdf_width", 3),
       height = getOption("plotscale_pdf_height", 3), devsize = if (scaled)
         "devsize" else "unscaled", scaled = getOption("plotscale_scaled", TRUE),
       onefile = TRUE, file = if (onefile) "Rplots.pdf" else "Rplot%03d.pdf",
       ...)
```

Arguments

x	object
width	desired plot width
height	desired plot height
devsize	a function of x, width, height, and ... that calculates device size
scaled	whether to rescale width and height by plot size
onefile	logical: passed to pdf . If true (the default) allow multiple figures in one file. If false, generate a file with name containing the page number for each page. Defaults to TRUE, and forced to true if file is a pipe.
file	file name passed to pdf
...	other arguments to pdf and fun

Value

(invisible) the file argument

See Also

Other as.pdf: [as.pdf](#)

Other devices: [as.pdf](#), [as.png.default](#), [as.png](#)

Examples

```
options(example.ask = FALSE)
options(device.ask.default = FALSE)
library(lattice)
as.pdf(xyplot(2~3),file = tempfile())
```

`as.png`*Coerce to PNG*

Description

Coerces to PNG. Generic, with default method.

Usage

```
as.png(x, ...)
```

Arguments

<code>x</code>	object
<code>...</code>	passed arguments

See Also

Other `as.png`: [as.png.default](#)

Other devices: [as.pdf.default](#), [as.pdf](#), [as.png.default](#)

Examples

```
example(as.png.default)
```

`as.png.default`*Convert to PNG by Default*

Description

Converts object to PNG. By default, device is scaled by plot size. Device is automatically closed and filename argument is returned.

Usage

```
## Default S3 method:
as.png(x, width = getOption("plotscale_png_width", 3),
  height = getOption("plotscale_png_height", 3), devsize = if (scaled)
  "devsize" else "unscaled", res = getOption("plotscale_res", 300),
  units = "in", scaled = getOption("plotscale_scaled", TRUE),
  filename = "Rplot%03d.png", ...)
```

Arguments

x	object
width	desired plot width
height	desired plot height
devsize	a function of x, width, height, and ... that calculates device size
res	passed to png
units	NOT passed to png ; width and height always treated as inches regardless
scaled	whether to rescale width and height by plot size
filename	file name passed to png
...	other arguments to png and devsize

Value

(invisible) the filename argument

See Also

Other as.png: [as.png](#)

Other devices: [as.pdf.default](#), [as.pdf](#), [as.png](#)

Examples

```
options(example.ask = FALSE)
options(device.ask.default = FALSE)
library(lattice)
as.png(xyplot(2~3), filename = tempfile())
```

as.size

Coerce to Size

Description

Coerce to class 'size'. Generic, with method for list.

Usage

```
as.size(x, ...)
```

Arguments

x	object
...	ignored

See Also

Other generic functions: [devsize](#), [plotsize](#), [unscaled](#)

Other devsize: [devsize.default](#), [devsize](#), [print.size](#), [unscaled.default](#), [unscaled](#)

Other plotsize: [plotsize.default](#), [plotsize](#), [print.size](#)

Other size: [as.size.list](#)

<code>as.size.list</code>	<i>Coerce List to Size</i>
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Description

Coerce list to class 'size'.

Usage

```
## S3 method for class 'list'
as.size(x, ...)
```

Arguments

<code>x</code>	object
<code>...</code>	ignored

See Also

Other size: [as.size](#)

<code>devsize</code>	<i>Determine Device Size</i>
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Description

Determines the size of a device. Generic, with default method.

Usage

```
devsize(x, ...)
```

Arguments

<code>x</code>	object
<code>...</code>	other arguments

See Also

Other generic functions: [as.size](#), [plotsize](#), [unscaled](#)

Other devsize: [as.size](#), [devsize.default](#), [print.size](#), [unscaled.default](#), [unscaled](#)

Examples

```
example(devsize.default)
```

devsize.default	<i>Determine Device Size by Default</i>
-----------------	---

Description

Determines smallest device width and height that give a plot width and height at least as large as the supplied width and height. Plot width and height are determined by [plotsize](#) (e.g., by the dimensions of the first panel as for [plotsize.default](#)).

Usage

```
## Default S3 method:
devsize(x, width, height, device = list(width = width * 1.1,
    height = height * 1.1), digits = getOption("plotscale_devsize_digits", 2),
    plotsize = getOption("plotscale_plotsize", "plotsize"),
    width.major = TRUE, optimize.minor = TRUE, check.aspect = TRUE,
    verbose = getOption("plotsize_verbose", FALSE), ...)
```

Arguments

x	object
width	desired plot width in inches
height	desired plot height in inches
device	length 2 named list suggesting initial width and height for device
digits	round width, height, device, and result to this many decimal places; passed to plotsize
plotsize	a function of x, width, height, digits and ... that returns a named list with elements 'width' and 'height' giving dimensions of x
width.major	whether to optimize width first for fixed aspect plots (used internally)
optimize.minor	whether to minor dimension for fixed aspect plots (used internally)
check.aspect	whether to adjust width and height to conform to fixed aspect (used internally)
verbose	whether to explain the process
...	other arguments passed to fun

Value

length 2 named list giving device width and height in inches (class 'size')

See Also

Other devsize: [as.size](#), [devsize](#), [print.size](#), [unscaled.default](#), [unscaled](#)

Examples

```
options(example.ask = FALSE)
options(device.ask.default = FALSE)
library(lattice)
data(iris)
x <- xyplot(Petal.Width~Petal.Length, groups = Species, data = iris)

devsize(x, width = 4, height = 4, digits = 1, verbose = TRUE)

devsize(x, width = 4, height = 5, digits = 1, verbose = TRUE)

x <- update(x, aspect = 1)
devsize(x, width = 4, height = 4, digits = 1, verbose = TRUE)

devsize(x, width = 4, height = 5, digits = 1, verbose = TRUE)

devsize(splom(iris[,1:4]), width = 4, height = 4)
devsize(xyplot(Sepal.Length ~ Sepal.Width | Species, data = iris), width = 4, height = 4)
library(ggplot2)
p <- ggplot(data = iris, mapping = aes(y = Sepal.Length, x = Sepal.Width)) +
  geom_point() + facet_wrap(~Species)
devsize(p, width = 4, height = 4)
devsize(p + theme(aspect.ratio = 1), width = 4, height = 4)
```

plotsize

Determine Plot Size

Description

Determines the size of a plot. Generic, with default method.

Usage

```
plotsize(x, ...)
```

Arguments

x	object
...	other arguments

See Also

Other generic functions: [as.size](#), [devsize](#), [unscaled](#)

Other plotsize: [as.size](#), [plotsize.default](#), [print.size](#)

Examples

```
example(plotsize.default)
```

plotsize.default	<i>Determine Plot Size by Default</i>
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Description

Determines the size of a grid graphics plot conditional on device dimensions. Size is defined as physical width and height in inches of the first encountered panel as rendered on a device with the specified width and height. `pdf()` is used as the evaluation device. 'First encountered panel' is resolved by evaluating the output of a call to `current.vpTree` for the first viewport name containing 'panel' or 'subpanel'. The latter takes precedence if available, for intuitive handling of output from `splom`.

Usage

```
## Default S3 method:
plotsize(x, width, height,
         digits = getOption("plotscale_plotsize_digits", 3),
         pattern = c("subpanel\\b", "panel\\b"), index = 1, ...)
```

Arguments

<code>x</code>	object
<code>width</code>	device width in inches
<code>height</code>	device height in inches
<code>digits</code>	round result to this many decimal places
<code>pattern</code>	character: vector of search patterns to identify critical viewport set; first non-empty set is retained
<code>index</code>	integer: select this element of the critical viewport set
<code>...</code>	other arguments passed to pdf

Value

length 2 named list giving width and height in inches (class 'size') for the first panel

See Also

Other plotsize: [as.size](#), [plotsize](#), [print.size](#)

Examples

```
options(ask.default = FALSE)
options(device.ask.default = FALSE)
library(lattice)
p <- xyplot(2~3)
plotsize(p, width = 7, height = 7)
```

```
print.size
```

```
Print Size
```

Description

Print object of class 'size', as returned by [devsize](#) and [plotsize](#).

Usage

```
## S3 method for class 'size'
print(x, ...)
```

Arguments

```
x          object
...        ignored
```

See Also

Other [plotsize](#): [as.size](#), [plotsize.default](#), [plotsize](#)

Other [devsize](#): [as.size](#), [devsize.default](#), [devsize](#), [unscaled.default](#), [unscaled](#)

```
unscaled
```

```
Determine Unscaled Device Size
```

Description

Determines the size of an unscaled device. Generic, with default method.

Usage

```
unscaled(x, ...)
```

Arguments

```
x          object
...        other arguments
```

See Also

Other generic functions: [as.size](#), [devsize](#), [plotsize](#)

Other devsize: [as.size](#), [devsize.default](#), [devsize](#), [print.size](#), [unscaled.default](#)

Examples

```
example(plotsize.default)
```

unscaled.default	<i>Determine Unscaled Device Size by Default</i>
------------------	--

Description

Determines the size of an unscaled device. Width and height are interpreted directly as device dimensions rather than plot dimensions.

Usage

```
## Default S3 method:  
unscaled(x, width, height, ...)
```

Arguments

x	object
width	desired width in inches
height	desired height in inches
...	other arguments

See Also

Other devsize: [as.size](#), [devsize.default](#), [devsize](#), [print.size](#), [unscaled](#)

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