

Package ‘afcharts’

February 26, 2026

Title Produce Charts Following UK Government Analysis Function Guidance

Version 0.5.1

Description Colour palettes and a 'ggplot2' theme to follow the UK Government Analysis Function best practice guidance for producing data visualisations, available at

<<https://analysisfunction.civilservice.gov.uk/policy-store/data-visualisation-charts/>>.

Includes continuous and discrete colour and fill scales, as well as a 'ggplot2' theme.

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URL <https://github.com/best-practice-and-impact/afcharts>,
<https://best-practice-and-impact.github.io/afcharts/>

BugReports <https://github.com/best-practice-and-impact/afcharts/issues>

Encoding UTF-8

LazyData true

RoxygenNote 7.3.3

Depends R (>= 4.1.0)

Imports ggplot2, scales, cli, rlang, dplyr, purrr, stats

Suggests ggtext, knitr, rmarkdown, tibble, tidyr, glue, stringr, testthat (>= 2.1.0), plotly, gt, svglite (>= 2.1.2), ragg (>= 1.2.6), gapminder, diffviewer, vdiffr, withr

VignetteBuilder knitr

NeedsCompilation no

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Repository CRAN

Date/Publication 2026-02-26 11:20:03 UTC

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af_colours	<i>Individual Analysis Function colours</i>
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Description

Quick access to individual colours from the Analysis Function colour palettes.

Usage

af_dark_blue

af_orange

af_grey

af_pale_grey

Format

An object of class character of length 1.

An object of class character of length 1.

An object of class character of length 1.

An object of class character of length 1.

Source

[Government Analysis Function Colours Guidance](#)

Examples

```
library(dplyr)
library(ggplot2)

# Example of using af_dark_blue to colour bars
iris %>%
  group_by(Species) %>%
  summarise(Petal.Width = mean(Petal.Width)) %>%
  ggplot() +
  geom_col(
    aes(Species, Petal.Width),
    fill = af_dark_blue
  ) +
  scale_y_continuous(
    expand = expansion(c(0, 0.05))
  ) +
  theme_af()
```

af_colour_palettes *Analysis Function colour palettes*

Description

A list grouping colours into palettes. Note that the use of the main, main2 and main6 colour palettes is deprecated. Please use categorical and categorical2 instead, which give access to the same colours.

Usage

```
af_colour_palettes
```

Format

A character list

Source

[Government Analysis Function Colours Guidance](#)

af_colour_values	<i>Analysis Function colour names and hex codes</i>
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Description

A vector containing colour names and their corresponding hex code.

Usage

```
af_colour_values
```

Format

A character vector

Source

[Government Analysis Function Colours Guidance](#)

mm_to_inch	<i>Convert millimetres to inches</i>
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Description

Convert millimetres to inches

Usage

```
mm_to_inch(x)
```

Arguments

x	Numeric value in millimetres
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Value

A numerical value in inches

Examples

```
mm_to_inch(100)
```

`save_govuk`*Save a plot at the correct dimensions for publishing on GOVUK*

Description

This is a wrapper around `ggplot2::ggsave()` with plot dimensions set for publishing on GOVUK.

Usage

```
save_govuk(  
  filename,  
  plot = ggplot2::last_plot(),  
  device = c("svg", "png", "jpg"),  
  path = NULL,  
  ...  
)
```

Arguments

<code>filename</code>	File name
<code>plot</code>	The plot to save
<code>device</code>	File type to produce (svg, png or jpg). svg is preferred as it scales well without pixelating
<code>path</code>	Directory to save the plot in
<code>...</code>	Other params passed to <code>ggplot::ggsave</code>

Value

Character vector giving path to saved file

Examples

```
library(ggplot2)  
library(dplyr)  
library(gapminder)  
  
# Images on GOVUK are shrunk. We therefore recommend using font size 20 pt  
# when exporting charts for GOVUK, which will appear as approximately 12 pt on  
# the website.  
use_afcharts(base_size = 20)  
  
grouped_bar_data <-  
  gapminder |>  
  filter(year %in% c(1967, 2007) &  
         country %in% c("United Kingdom", "Ireland", "France", "Belgium"))  
  
bar_chart <- ggplot(grouped_bar_data,
```

```

    aes(x = country, y = lifeExp, fill = as.factor(year))) +
  geom_bar(stat = "identity", position = "dodge") +
  scale_y_continuous(expand = c(0, 0)) +
  scale_fill_discrete_af() +
  labs(
    x = "Country",
    y = NULL,
    fill = NULL,
    title = "Living longer",
    subtitle = "Difference in life expectancy, 1967-2007",
    caption = "Source: Gapminder"
  )

file <- tempfile(fileext = ".svg")
save_govuk(file, bar_chart, device = "svg")
unlink(file)

```

scale_colour_continuous_af

Continuous colour scales for Analysis Function plots

Description

Continuous colour scales for Analysis Function plots

Usage

```

scale_colour_continuous_af(
  palette = "sequential",
  palette_type = c("af"),
  reverse = FALSE,
  na.value = afcharts::af_pale_grey,
  guide = "colourbar",
  ...
)

```

Arguments

palette	Name of palette to use from af_colour_palettes; e.g. "categorical", "sequential", "focus". Default value is "sequential".
palette_type	Currently only the Analysis Function palettes are supported. Defaults to "af".
reverse	Boolean value to indicate whether the palette should be reversed.
na.value	Colour to set for missing values.
guide	A name or function used to create guide. Default is "colourbar".
...	Additional arguments passed to scale type.

Value

ggplot2 continuous colour scale

Examples

```
library(ggplot2)

ggplot(mtcars, aes(x = mpg, y = wt, colour = cyl)) +
  geom_point() +
  scale_colour_continuous_af()
```

scale_colour_discrete_af

Discrete colour scales for Analysis Function plots

Description

Discrete colour scales for Analysis Function plots

Usage

```
scale_colour_discrete_af(
  palette = "categorical",
  palette_type = c("af"),
  reverse = FALSE,
  na.value = afcharts::af_pale_grey,
  ...
)
```

Arguments

palette	Name of palette to use from af_colour_palettes; e.g. "categorical", "sequential", "focus". Default value is "categorical".
palette_type	Currently only the Analysis Function palettes are supported. Defaults to "af".
reverse	Boolean value to indicate whether the palette should be reversed.
na.value	Colour to set for missing values.
...	Additional arguments passed to scale type.

Details

If the palette is set to "categorical" or "sequential" and fewer than the maximum number of colours are required then the colours will be used in the correct order following the analysis function guidance.

E.g. If only two colours are required and the palette is set to "categorical" then the "categorical2" palette will be used instead, without warning.

Value

ggplot2 discrete colour scale

Examples

```
library(ggplot2)
library(dplyr)

economics_long %>%
  filter(variable %in% c("psavert", "uempmed")) %>%
  ggplot(aes(x = date, y = value, colour = variable)) +
  geom_line(linewidth = 1) +
  scale_colour_discrete_af()
```

scale_fill_continuous_af

Continuous colour fill scales for Analysis Function plots

Description

Continuous colour fill scales for Analysis Function plots

Usage

```
scale_fill_continuous_af(
  palette = "sequential",
  palette_type = c("af"),
  reverse = FALSE,
  na.value = afcharts::af_pale_grey,
  guide = "colourbar",
  ...
)
```

Arguments

palette	Name of palette to use from af_colour_palettes; e.g. "categorical", "sequential", "focus". Default value is "sequential".
palette_type	Currently only the Analysis Function palettes are supported. Defaults to "af".
reverse	Boolean value to indicate whether the palette should be reversed.
na.value	Colour to set for missing values.
guide	A name or function used to create guide. Default is "colourbar".
...	Additional arguments passed to scale type.

Value

ggplot2 continuous fill scale

Examples

```
library(ggplot2)

ggplot(faithfuld, aes(x = waiting, y = eruptions, fill = density)) +
  geom_raster() +
  scale_fill_continuous_af()
```

scale_fill_discrete_af

Discrete colour fill scales for Analysis Function plots

Description

Discrete colour fill scales for Analysis Function plots

Usage

```
scale_fill_discrete_af(
  palette = "categorical",
  palette_type = c("af"),
  reverse = FALSE,
  na.value = afcharts::af_pale_grey,
  ...
)
```

Arguments

palette	Name of palette to use from af_colour_palettes; e.g. "categorical", "sequential", "focus". Default value is "categorical".
palette_type	Currently only the Analysis Function palettes are supported. Defaults to "af".
reverse	Boolean value to indicate whether the palette should be reversed.
na.value	Colour to set for missing values.
...	Additional arguments passed to scale type.

Details

If the palette is set to "categorical" or "sequential" and fewer than the maximum number of colours are required then the colours will be used in the correct order following the analysis function guidance.

E.g. If only two colours are required and the palette is set to "categorical" then the "categorical2" palette will be used instead, without warning.

Value

ggplot2 discrete fill scale

Examples

```

library(ggplot2)

d <- subset(mpg, manufacturer == "ford")

ggplot(d, aes(x = class, fill = class)) +
  geom_bar() +
  scale_fill_discrete_af()

# The Analysis Function guidance recommends using a dark blue outline on
# barcharts with a sequential colour palette

d2 <- data.frame(
  age = c("<25", "25-44", "45-54", "55-64", "65 plus"),
  score = c(20, 34, 44, 88, 90)
)

ggplot(d2, aes(x = age, y = score, fill = age)) +
  geom_col(colour = af_dark_blue) +
  scale_fill_discrete_af(palette = "sequential")

```

 theme_af

Analysis Function theme for ggplot2 charts.

Description

ggplot2 theme for Analysis Function plots.

Usage

```

theme_af(
  base_size = getOption("afcharts.base_size", 14),
  base_line_size = getOption("afcharts.base_line_size", base_size/24),
  base_rect_size = getOption("afcharts.base_rect_size", base_size/24),
  grid = getOption("afcharts.grid", "y"),
  axis = getOption("afcharts.axis", "x"),
  ticks = getOption("afcharts.ticks", "xy"),
  legend = getOption("afcharts.legend", "right"),
  axis_text = getOption("afcharts.axis_text", "xy"),
  axis_title = getOption("afcharts.axis_title", "xy"),
  legend_title = getOption("afcharts.legend_title", "show")
)

```

Arguments

base_size base font size, given in pts.
 base_line_size base size for line elements.

base_rect_size base size for rect elements.
 grid, axis, ticks 'x', 'y', 'xy' or 'none' to determine for which axes the attribute should be drawn. Grid defaults to 'y', axis to 'x', and ticks to 'xy'.
 legend 'right', 'left', 'top', 'bottom' or 'none' to determine the position of the legend. This can also be followed by a justification along that side (top, bottom, left, right or centre) e.g. 'top-left', 'left-bottom', 'right-centre'. Defaults to 'right'.
 axis_text, axis_title 'x', 'y', 'xy' or 'none' to determine whether axis text and/or axis titles should be displayed. Text defaults to 'xy', as does title. Note that axis text refers to the 'labels' under the tick marks.
 legend_title Set to 'none' to suppress legend titles. Defaults to 'show'.

Value

ggplot2 plot theme

Examples

```
library(ggplot2)

p <- ggplot(mpg, aes(x = class)) + geom_bar()

p
p + theme_af()
```

use_afcharts *Use afcharts defaults.*

Description

Set afcharts theme, colour palette and geom aesthetic defaults for ggplot2 charts.

Usage

```
use_afcharts(
  default_colour = afcharts::af_colour_values["dark-blue"],
  ...,
  reset = FALSE
)
```

Arguments

default_colour Default colour/fill for geoms. Default value is 'blue' from af_colour_values.
 ... Arguments passed to theme_af().
 reset Logical. Turn off use_afcharts. This aims to reset the default chart setting to their status when use_afcharts was first called.

Value

NULL. Function is used for side effects of setting ggplot2 plot theme, colour palette and geom aesthetic defaults.

Examples

```
library(ggplot2)

d <- subset(mpg, manufacturer == "ford")

ggplot(d, aes(x = model)) + geom_bar()
ggplot(d, aes(x = model, fill = class)) + geom_bar()

use_afcharts()

ggplot(d, aes(x = model)) + geom_bar()
ggplot(d, aes(x = model, fill = class, colour = class)) + geom_bar()
```

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