

# Package ‘devEMF’

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**Type** Package

**Title** EMF Graphics Output Device

**Version** 4.1

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**Depends** R (>= 2.10.1)

**SystemRequirements** FreeType, Xft, or zlib (only needed for platforms other than OSX and Windows)

**Description** Output graphics to EMF+/EMF.

**License** GPL-3

**NeedsCompilation** yes

**Repository** CRAN

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## R topics documented:

|               |          |
|---------------|----------|
| emf . . . . . | 1        |
| <b>Index</b>  | <b>4</b> |

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|-----|--|
| emf | <i>Enhanced Metafile Graphics Device</i> |
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## Description

‘emf’ starts the graphics device driver for producing enhanced metafile (emf+/emf) graphics, which can imported natively as vector graphics in both LibreOffice and Microsoft Office.

## Usage

```
emf(file = "Rplot.emf", width = 7, height = 7, units = c("in", "cm", "mm"),
    bg = "transparent", fg = "black", pointsize = 12,
    family = "Helvetica", coordDPI = 300, custom.lty=emfPlus,
    emfPlus=TRUE, emfPlusFont = FALSE, emfPlusRaster = FALSE,
    emfPlusFontToPath = FALSE)
```

## Arguments

|                   |   |
|-------------------|---|
| file              | character string giving the name of file.   |
| width             | width of plot.  |
| height            | height of plot.   |
| units             | units in which width and height are given. Must be one of in (inches, default), cm, or mm.  |
| bg                | plot background color. If transparent, no background color is painted.  |
| fg                | initial foreground color to be used.  |
| pointsize         | default font point size to be used.   |
| family            | default font family to be used (if you use non-standard fonts, consider setting <code>emfPlusFontToPath=TRUE</code> to ensure text looks correct on the viewing system).  |
| coordDPI          | DPI used for coordinate system (while EMF is a vector format, it (and R) use discrete coordinate systems).  |
| custom.lty        | logical: if false, approximate R line types with EMF standard line types (any program that imports EMF should support this). If true, use exact (custom) R line type, which is only supported by LibreOffice if using EMF+. |
| emfPlus           | logical: whether to use EMF+ records or not   |
| emfPlusFont       | logical: if using EMF+, should text use EMF+ or EMF records?  |
| emfPlusRaster     | logical: if using EMF+, should raster images use EMF+ or EMF records?   |
| emfPlusFontToPath | logical: if using EMF+, should text be converted to graphics paths and saved in file?   |

## Details

The standard office suites support very few vector graphics formats for import. Enhanced Metafiles (EMFs) do tend to be supported, which is the purpose of this device. EMF+ is a newer format that is encapsulated within an EMF file and allows options such as partial transparency.

The EMF/EMF+ specifications do not allow for multiple pages; attempting to create multiple pages will result in a warning message and the output file will contain the different pages superimposed.

Also, note EMF/EMF+ does not support font embedding, so with the default options, any fonts used must be present both on the system that you use when you create the graphics file (i.e., when you run R) and on the system that you use to import/view the file. **HOWEVER**, the `emfPlusFontToPath = TRUE` option converts text characters into graphics paths and makes the resulting EMF+ files truly portable (although text strings will no longer be editable by downstream programs). This option is

currently only implemented for Linux (with FreeType and Xft installed) and Windows. Contact the author if you'd like to request implementation on Apple.

EMF/EMF+ supports Unicode characters, and this package tries to maintain that support as well. However, font metric information is system dependent and on linux depends on FreeType or XFT being installed. Regardless, basic font metrics for the standard Adobe PostScript font families are built into this package.

Only EMF+ allows partial transparency (i.e., the only useful type –  $0.0 < \alpha < 1.0$ ); attempting to use a transparent color when `emfPlus = FALSE` will result in a warning message and the output will be completely transparent (invisible).

LibreOffice support for EMF+ was incomplete as of version 5, and, cannot handle EMF+ records with rotated text or raster images (hence the options to turn off EMF+ and use EMF instead for these types of records). `devEMF` defaults to EMF for these records to maintain compatibility, but quality is higher if EMF+ records are used.

### Known limitations

- EMF (as opposed to EMF+) raster rendering does not support interpolation control.
- EMF (as opposed to EMF+) does not support an alpha channel.
- Path rendering is not implemented for EMF (as opposed to EMF+).

### Author(s)

Philip Johnson

### See Also

[Devices](#)

### Examples

```
require(devEMF)
## Not run:
# open file "bar.emf" for graphics output
emf("bar.emf")
# produce the desired graph(s)
plot(1,1)
dev.off() #turn off device and finalize file

## End(Not run)
```

# Index

\* **device**

emf, [1](#)

devEMF (emf), [1](#)

Devices, [3](#)

emf, [1](#)