

# Package ‘frontmatter’

July 3, 2026

**Title** Parse Front Matter from Documents

**Version** 0.3.0

**Description** Extracts and parses structured metadata ('YAML' or 'TOML') from the beginning of text documents. Front matter is a common pattern in 'Quarto' documents, 'R Markdown' documents, static site generators, documentation systems, content management tools and even 'Python' and 'R' scripts where metadata is placed at the top of a document, separated from the main content by delimiter fences.

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**URL** <https://github.com/posit-dev/frontmatter>,  
<https://posit-dev.github.io/frontmatter/>

**BugReports** <https://github.com/posit-dev/frontmatter/issues>

**Imports** cpp11, rlang, tomleditor, yaml12

**Suggests** testthat (>= 3.0.0), withr, yaml

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|                     |                                                   |
|---------------------|---------------------------------------------------|
| format_front_matter | <i>Format and Write YAML or TOML Front Matter</i> |
|---------------------|---------------------------------------------------|

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## Description

Serialize R data as YAML or TOML front matter and combine it with document content. `format_front_matter()` returns the formatted document as a string, while `write_front_matter()` writes it to a file or prints to the console. These functions are the inverse of `parse_front_matter()` and `read_front_matter()`.

## Usage

```
format_front_matter(
  x,
  delimiter = NULL,
  format = "auto",
  format_yaml = NULL,
  format_toml = NULL
)
```

```
write_front_matter(
  x,
  path = NULL,
  delimiter = NULL,
  ...,
  format = "auto",
  format_yaml = NULL,
  format_toml = NULL
)
```

## Arguments

- |                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|--------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| x                        | A list with data and body elements, typically as returned by <code>parse_front_matter()</code> or <code>read_front_matter()</code> . The data element contains the metadata to serialize (can be NULL to write body only), and body contains the document content (can be NULL or empty).                                                                                                                                                                          |
| delimiter                | A character string specifying the fence style, or a character vector for custom delimiters. See <b>Delimiter Formats</b> for available options. When NULL (the default), the delimiter is inferred automatically: if x was returned by <code>parse_front_matter()</code> or <code>read_front_matter()</code> , the original fence style is preserved; otherwise <code>write_front_matter()</code> falls back to the file extension of path, and finally to "yaml". |
| format                   | The serialization format: "auto" (detect from delimiter), "yaml", or "toml". Usually auto-detection works well.                                                                                                                                                                                                                                                                                                                                                    |
| format_yaml, format_toml | Custom formatter functions, or NULL to use defaults. Each function should accept an R object and return a character string.                                                                                                                                                                                                                                                                                                                                        |

path                      File path to write to, or NULL to print to the console  
 ...                      Additional arguments passed to `writeBin()` when writing to a file (e.g., `useBytes`).

### Value

- `format_front_matter()`: A character string containing the formatted document with front matter.
- `write_front_matter()`: Called for its side effect; returns NULL invisibly.

### Functions

- `format_front_matter()`: Format front matter as a string
- `write_front_matter()`: Write front matter to a file or console

### Delimiter Formats

The delimiter argument controls the fence style used to wrap the front matter. You can use these built-in shortcuts:

| Shortcut                  | Format | Opening      | Closing  | Use Case                          |
|---------------------------|--------|--------------|----------|-----------------------------------|
| "yaml"                    | YAML   | –            | –        | Markdown, R Markdown, Quarto      |
| "toml"                    | TOML   | +++          | +++      | Hugo, some static site generators |
| "yaml_comment"            | YAML   | # –          | # –      | R scripts, Python scripts         |
| "toml_comment"            | TOML   | # +++        | # +++    | R scripts, Python scripts         |
| "yaml_roxy"               | YAML   | #' –         | #' –     | Roxygen2 documentation            |
| "toml_roxy"               | TOML   | #' +++       | #' +++   | Roxygen2 documentation            |
| "toml_pep723"             | TOML   | # /// script | # ///    | Python PEP 723 inline metadata    |
| "yaml_sql_line"           | YAML   | – –          | – –      | SQL scripts (line comments)       |
| "toml_sql_line"           | TOML   | – +++        | – +++    | SQL scripts (line comments)       |
| "yaml_sql_block_compact"  | YAML   | /* –         | – */     | SQL scripts (block comments)      |
| "toml_sql_block_compact"  | TOML   | /* +++       | +++ */   | SQL scripts (block comments)      |
| "yaml_sql_block_expanded" | YAML   | /* + –       | – + */   | SQL scripts (block comments)      |
| "toml_sql_block_expanded" | TOML   | /* + +++     | +++ + */ | SQL scripts (block comments)      |

For custom delimiters, pass a character vector of length 1, 2, or 3:

- **Length 1**: Used as both opener and closer, with no line prefix
- **Length 2**: `c(opener, prefix)` where opener is also used as closer
- **Length 3**: `c(opener, prefix, closer)` for full control

### Custom Formatters

By default, the package uses `yaml12::format_yaml()` for YAML and `tomledit::to_toml()` for TOML. You can provide custom formatter functions via `format_yaml` and `format_toml` to override these defaults.

Custom formatters must accept an R object and return a character string containing the serialized content.

## YAML Specification Version

The default YAML formatter uses YAML 1.2 via `yaml12::format_yaml()`. To use YAML 1.1 formatting instead (via `yaml::as_yaml()`), set either:

- The R option `frontmatter.serialize_yaml.spec` to "1.1"
- The environment variable `FRONTMATTER_SERIALIZE_YAML_SPEC` to "1.1"

The option takes precedence over the environment variable. Valid values are "1.1" and "1.2" (the default).

## Roundtrip Support

Documents formatted with these functions can be read back with `parse_front_matter()` or `read_front_matter()`. For comment-prefixed formats (like `yaml_comment`, `yaml_roxy`, or `yaml_sql_line`), a separator line is automatically inserted between the closing fence and the body when the body starts with the same comment prefix, ensuring clean roundtrip behavior.

When `delimiter` is `NULL` (the default), the delimiter is inferred automatically, making roundtrips seamless:

- `format_front_matter()` uses the `fence_type` attribute preserved by `parse_front_matter()` and `read_front_matter()`, so the output uses the same fence style as the original document.
- `write_front_matter()` additionally falls back to a built-in extension-to-delimiter map when the input has no `fence_type` attribute:

| Extension                                                | Default delimiter                     |
|----------------------------------------------------------|---------------------------------------|
| <code>.sql</code>                                        | <code>"yaml_sql_block_compact"</code> |
| <code>.py</code>                                         | <code>"toml_pep723"</code>            |
| <code>.R</code>                                          | <code>"yaml_roxy"</code>              |
| <code>.md</code> , <code>.qmd</code> , <code>.Rmd</code> | <code>"yaml"</code>                   |

## See Also

`parse_front_matter()` and `read_front_matter()` for the inverse operations.

## Examples

```
# Create a document with YAML front matter
doc <- list(
  data = list(title = "My Document", author = "Jane Doe"),
  body = "Document content goes here."
)

# Format as a string (delimiter inferred from fence_type attr, falls back to yaml)
format_front_matter(doc)

# Write to a file (delimiter inferred from .md extension -> yaml)
tmp <- tempfile(fileext = ".md")
write_front_matter(doc, tmp)
```

```

readLines(tmp)

# Print to console (when path is NULL)
write_front_matter(doc)

# Use TOML format explicitly
format_front_matter(doc, delimiter = "toml")

# Use comment-wrapped format for R scripts explicitly
r_script <- list(
  data = list(title = "Analysis Script"),
  body = "# Load libraries\nlibrary(dplyr)"
)
format_front_matter(r_script, delimiter = "yaml_comment")

# Write to an R file: delimiter inferred from .R extension -> yaml_roxy
tmp_r <- tempfile(fileext = ".R")
write_front_matter(r_script, tmp_r)
readLines(tmp_r)

# Roundtrip: delimiter is automatically preserved from the original format
original <- "# ---
# title: Original
# ---
# R code here"

doc <- parse_front_matter(original)
doc$data$title <- "Modified"
format_front_matter(doc) # uses yaml_comment, matching the source

```

---

|                    |                                        |
|--------------------|----------------------------------------|
| parse_front_matter | <i>Parse YAML or TOML Front Matter</i> |
|--------------------|----------------------------------------|

---

## Description

Extract and parse YAML or TOML front matter from a file or a text string. Front matter is structured metadata at the beginning of a document, delimited by fences (--- for YAML, +++ for TOML). Comment-wrapped formats (#, #', --) and SQL block comments (/\* \*/) are also supported. `parse_front_matter()` processes a character string, while `read_front_matter()` reads from a file. Both functions return a list with the parsed front matter and the document body.

## Usage

```

parse_front_matter(text, parse_yaml = NULL, parse_toml = NULL)

read_front_matter(path, parse_yaml = NULL, parse_toml = NULL)

```

## Arguments

|                                                   |                                                                                                                                                                                         |
|---------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <code>text</code>                                 | A character string or vector containing the document text. If a vector with multiple elements, they are joined with newlines (as from <code>readLines()</code> ).                       |
| <code>parse_yaml</code> , <code>parse_toml</code> | A function that takes a string and returns a parsed R object, or <code>NULL</code> to use the default parser. Use <code>identity</code> to return the raw string without parsing.       |
| <code>path</code>                                 | A character string specifying the path to a file. The file is assumed to be UTF-8 encoded. A UTF-8 BOM (byte order mark) at the start of the file is automatically stripped if present. |

## Value

A named list with two elements:

- `data`: The parsed front matter as an R object, or `NULL` if no valid front matter was found.
- `body`: The document content after the front matter, with leading empty lines removed. If no front matter is found, this is the original text.

## Functions

- `parse_front_matter()`: Parse front matter from text
- `read_front_matter()`: Parse front matter from a file.

## Custom Parsers

By default, the package uses `yaml12::parse_yaml()` for YAML and `tomledit::parse_toml()` for TOML. You can provide custom parser functions via `parse_yaml` and `parse_toml` to override these defaults.

Use `identity` to return the raw YAML or TOML string without parsing.

## YAML Specification Version

The default YAML parser uses YAML 1.2 via `yaml12::parse_yaml()`. To use YAML 1.1 parsing instead (via `yaml::yaml.load()`), set either:

- The R option `frontmatter.parse_yaml.spec` to `"1.1"`
- The environment variable `FRONTMATTER_PARSE_YAML_SPEC` to `"1.1"`

The option takes precedence over the environment variable. Valid values are `"1.1"` and `"1.2"` (the default).

YAML 1.1 differs from YAML 1.2 in several ways, most notably in how it handles boolean values (e.g., `yes/no` are booleans in 1.1 but strings in 1.2).

**Examples**

```
# Parse YAML front matter
text <- "---
title: My Document
date: 2024-01-01
---
Document content here"

result <- parse_front_matter(text)
result$data$title # "My Document"
result$body       # "Document content here"

# Parse TOML front matter
text <- "+++
title = 'My Document'
date = 2024-01-01
+++
Document content"

result <- parse_front_matter(text)

# Get raw YAML without parsing
result <- parse_front_matter(text, parse_yaml = identity)

# Use a custom parser that adds metadata
result <- parse_front_matter(
  text,
  parse_yaml = function(x) {
    data <- yaml12::parse_yaml(x)
    data$parsed_at <- Sys.time()
    data
  }
)

# Or read from a file
tmpfile <- tempfile(fileext = ".md")
writeLines(text, tmpfile)

read_front_matter(tmpfile)
```

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