

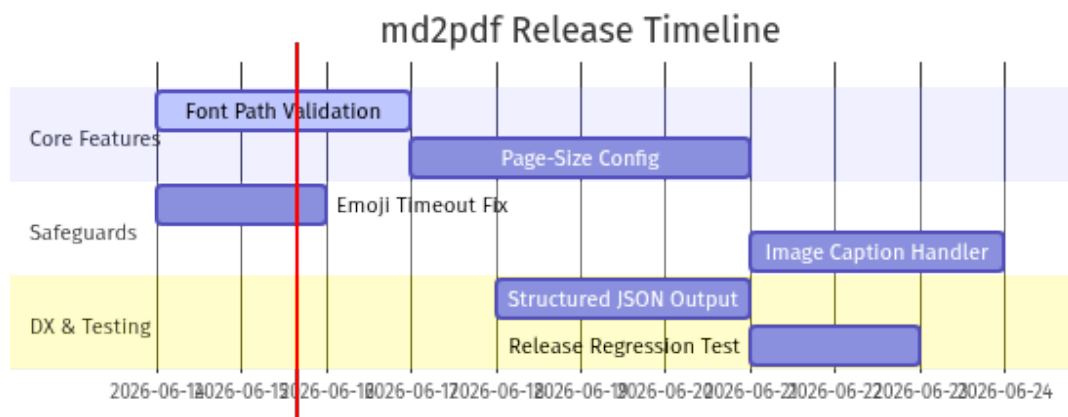
<!-- SOURCE_FILE:
/Users/hari/Desktop/sandbox/md2pdf/examples/project_roadmap/roadmap.md -->

md2pdf Engine - Version 0.5.0 Release Roadmap

This roadmap outlines the milestones, features, and fixes scheduled for the upcoming v0.5.0 release of the programmatic markdown-to-pdf typesetting engine.

Project Status Timeline

Below is the high-level roadmap showing the dependencies and sequence of tasks leading up to the v0.5.0 release.



Milestone Task List

Core Rendering Pipeline & Config

- ✓ Concurrent pre-fetching of Mermaid & LaTeX diagram assets via thread pool (completed in v0.4.0)
- ✓ Table column alignment styling support via `:-:-` syntax (completed in v0.4.0)
- [/] **Feature:** Expose page sizing (e.g., A4, Letter, A3) and page orientation (landscape/portrait)
- ☐ **Feature:** Support user-defined image captions using Markdown image alt-text
- ☐ **Validator:** Implement pre-flight validation checks for custom TTF font files specified in [theme]

Network & Reliability Safeguards

- ✓ Offline fallback placeholder box renderer when Kroki API is unavailable (completed in v0.3.0)
- ☐ **Bugfix:** Add explicit timeout logic in `EmojiPreProcessor` download calls to prevent network hangs

Developer Experience (DX)

-  **CLI:** Add `--format json` output flag for `--validate-only` command to ease CI/CD automation integration

Detailed Design Briefs

1. Font Path Validation

Currently, if a user references a font file path in their `md2pdf.toml` theme section that is incorrect, the engine crashes deep in ReportLab during font registration. We are introducing a validation rule to verify paths early.

```
import os
from md2pdf.core.errors import ConfigError

def validate_font_paths(theme_config) -> None:
    for field in ["font_file_body", "font_file_heading", "font_file_mono"]:
        path = getattr(theme_config, field, "")
        if path:
            expanded = os.path.expanduser(path)
            if not os.path.isfile(expanded):
                raise ConfigError(
                    f"Configuration error: Font file specified in '{field}' "
                    f"does not exist: {path}"
                )
```

Pre-flight Validation

Pre-flight check functions should be registered under the `Pipeline.validate()` sequence so that they return structured `ValidationIssue` collections rather than raising raw errors immediately.

2. Page-Size & Orientation Configuration

To support custom document layouts (e.g., landscape slide presentations or legal briefs), we will expose the page geometry settings.

Warning

Changing the page size or orientation changes the printable width boundaries. Complex elements like tables and diagrams will scale to fit the new boundaries automatically, but manual page breaks (`\pagebreak`) may require review.

```
# Example md2pdf.toml with custom geometry
[md2pdf]
page_size = "letter"          # options: a4, letter, legal, a3, a5
page_orientation = "landscape" # options: portrait, landscape
```