

# Krik Documentation

This page provides comprehensive documentation for using Krik, the static site generator.

## Quick Start

### Installation

#### From Homebrew (macOS/Linux) - Recommended

```
# Install from homebrew tap
brew install mcaserta/krik/krik
```

#### From Crates.io

```
# Install globally from crates.io
cargo install krik
```

```
# No additional setup required - themes and content are embedded!
```

#### From Source

```
# Clone the repository
git clone <repository-url>
cd krik
```

```
# Build the project
cargo build --release
```

```
# The executable will be at target/release/kk
```

### Getting Started

#### Initialize a New Site

Create a new Krik site with sample content and default theme:

```
kk init my-blog          # Create new site in 'my-blog' directory
cd my-blog
kk server                # Start development server
```

Or initialize in the current directory:

```
kk init                  # Initialize in current directory
kk init --force          # Overwrite existing files
```

#### Create Content

Create new blog posts and pages quickly:

```
kk post "My Great Post"  # Create new blog post
kk post                  # Create with default title "New post"
kk post "Custom Post" -f my-slug # Custom filename

kk page "About Us"       # Create new page
```

```
kk page                                # Create with default title "New page"
kk page "Contact" -f contact          # Custom filename
```

## Development Server

Start the development server with live reload:

```
kk server                             # Start on port 3000 with live reload
kk server --port 8080                 # Custom port
kk server --no-live-reload            # Disable live reload (useful for mobile devices)
```

## Generate Static Site

```
# Generate site from current directory
kk
```

```
# Generate with custom paths
kk --input ./content --output ./_site --theme ./themes/custom
```

## Linting Content

Use the linter to validate front matter, filenames, and conventions:

```
kk lint                               # Lint default content directory
kk lint --input content               # Lint a specific directory
kk lint --strict                      # Treat warnings as errors
```

### What it checks

- Title: required and non-empty
- Language codes: must match filename suffix (e.g., `hello.it.md` → `it`)
- Slugs: filename stem must be slug-like (lowercase, numbers, hyphens)
- Layout: warns on unrecognized values and directory/layout mismatches
- Date: warns if missing for posts; warns if > 1 year in the future
- Tags: array of non-empty strings; warns when tags are not slug-like
- TOC: warns if toc is not a boolean
- Duplicate slugs: within the same directory and language
- Duplicate titles: warns within the same directory and language

The command exits non-zero on errors. In `--strict` mode, warnings are also treated as errors.

## Content Organization

### Directory Structure

```
content/
├── site.toml          # Site configuration
├── posts/             # Blog posts
│   ├── hello.md
│   └── hello.es.md    # Spanish translation
├── pages/             # Static pages
│   └── about.md
└── images/            # Static assets
    └── logo.png
```

## Site Configuration

Create a `site.toml` file in your content directory:

```
title = "My Website"
base_url = "https://example.com" # Optional, for feed generation
```

### Configuration Options:

- `title`: Site title (displayed in navigation and feeds)
- `base_url`: Base URL for proper Atom feed link resolution

## Front Matter

All markdown files can include YAML front matter for metadata:

```
---
title: "Page Title"
date: 2024-01-15T10:30:00Z
layout: post
tags: ["rust", "web", "static-site"]
toc: true
draft: false
custom_field: "custom value"
---
# Your content here
```

### Front Matter Fields

Field	Type	Description
<code>title</code>	String	Page/post title
<code>date</code>	ISO 8601	Publication date (falls back to file mtime)
<code>layout</code>	String	Template to use (post, page, or custom)
<code>tags</code>	Array	Tags for categorization
<code>toc</code>	Boolean	Enable table of contents generation
<code>pdf</code>	Boolean	Enable PDF generation
<code>draft</code>	Boolean	Skip file from processing when true
Custom fields	Any	Additional metadata accessible in templates

## Templates and Layouts

### Automatic Template Selection

- **Posts**: Files in `content/posts/` use the post template
- **Pages**: Files in `content/pages/` or root use the page template
- **Index**: Homepage uses the index template

## Manual Template Override

Use the layout field in front matter:

```
---
title: "Special Page"
layout: custom
---
```

## Template Features

- **Post Template:** Tags, "Back to Home" link, language selector, scroll-to-top
- **Page Template:** Clean layout, language selector (if translations available), scroll-to-top
- **Index Template:** Post listing, theme toggle, scroll-to-top

## Internationalization (i18n)

### Creating Translations

Add language codes to filenames:

- `hello.md` - Default language (English)
- `hello.it.md` - Italian translation
- `hello.es.md` - Spanish translation
- `hello.fr.md` - French translation

### Supported Languages

Krik maintains an internal language map used for validation and display names. Out of the box it supports: en, it, es, fr, de, pt, ja, zh, ru, ar. Language names in the UI are resolved from this map.

### Language Navigation & Index Selection

- Pages with translations automatically show a language selector dropdown.
- The posts index shows one entry per post base name. If multiple language versions exist, the index prefers the default language. If only a non-default language exists (e.g., only `foo.it.md`), that translation is included.

## Advanced Features

### Table of Contents

Enable TOC generation with `toc: true` in front matter:

```
---
title: "Long Article"
toc: true
---
```

### Features:

- Automatic ID generation for headings (AST-based)
- Hierarchical structure preservation
- Clickable navigation links
- Smooth scrolling to sections

## Footnotes

Krik supports enhanced footnotes with bidirectional navigation:

This has a footnote<sup>[^1]</sup>.

<sup>[^1]</sup>: This is the footnote content.

### Features:

- Click footnote numbers to jump to definitions
- Click return arrows () to return to text
- Smooth scrolling for all footnote navigation

## Scroll-to-Top Button

Automatically appears on longer pages with smart visibility:

- Hidden by default until scrolling >300px
- Fixed position in bottom-right corner
- Smooth scrolling animation
- Theme-aware styling
- Mobile-optimized size and positioning

## SEO and Discovery

Krik automatically generates SEO-optimized files for search engines and web crawlers:

### Atom Feed Generation

Automatically generates an RFC 4287 compliant Atom feed at `feed.xml`:

#### Features:

- Only includes posts (content with post template)
- Limited to 20 most recent posts
- Full HTML content with proper XML escaping
- `xml:base` support when `base_url` is configured
- Proper metadata (titles, dates, IDs)

### XML Sitemap Generation

Automatically generates a comprehensive XML sitemap at `sitemap.xml`:

#### Features:

- XML Schema validation with proper namespaces
- Multilingual support with `<xhtml:link>` alternate language declarations
- One entry per content piece with canonical URLs (prefers English)
- Proper priority and change frequency settings
- Excludes draft content automatically

### robots.txt Generation

Automatically generates SEO-optimized robots.txt:

## Features:

- References sitemap.xml location
- Allows all content by default (good for most static sites)
- Blocks access to system files and build directories
- Includes bot-specific rules for major search engines
- Blocks known problematic crawlers/scrapers
- Includes polite crawl delay settings

## PDF Generation

Krik supports automatic PDF generation for your content using pandoc and the typst engine. This feature allows you to provide downloadable PDF versions of your posts and pages.

### Prerequisites

Before using PDF generation, you need to install the required external tools:

#### Install pandoc

##### macOS:

```
brew install pandoc
```

##### Ubuntu/Debian:

```
sudo apt install pandoc
```

**Windows:** Download from [pandoc.org](https://pandoc.org) or use:

```
winget install pandoc
```

#### Install typst

##### All platforms:

```
cargo install typst-cli
```

##### Alternative for macOS:

```
brew install typst
```

## Enabling PDF Generation


To enable PDF generation for a document, add `pdf: true` to your front matter:

```
---
title: "My Article"
date: 2025-01-15T10:30:00Z
pdf: true
---
# My Article
```

This content will be available as both HTML and PDF.

## Features

### Automatic PDF Links

When PDF generation is enabled, Krik automatically adds a PDF download link () to your HTML templates, positioned next to the theme switcher. The link appears only for documents with `pdf: true` in their front matter.

### Language-Aware Filenames

PDF files are generated with language-aware filenames:

- `welcome.md` → `welcome.pdf`
- `welcome.it.md` → `welcome.it.pdf`
- `about.fr.md` → `about.fr.pdf`

### Conditional Appendix

When your site has a `base_url` configured in `site.toml`, PDFs include an appendix with:

- **Download URL:** Link to the original web version
- **Generation timestamp:** When the PDF was created
- **Multi-language support:** Appendix text translated based on document language

Supported appendix languages: English, Italian, Spanish, French, German, Portuguese, Japanese, Chinese, Russian, Arabic.

### Image Path Resolution

Krik automatically resolves relative image paths in PDFs, handling complex patterns like:

- `![[Image]](content/images/photo.jpg)`
- `![[Diagram]](assets/diagrams/flow.png)`
- `![[Logo]](content/pages/logo.svg)`

### Configuration

PDF generation works with your existing site configuration. Make sure your `site.toml` includes:

```
title = "My Site"
base_url = "https://mysite.com" # Optional: enables PDF appendix with download URL
```

### Development Workflow

```
# 1. Add pdf: true to your document
echo '---
title: "My PDF Post"
pdf: true
---

# My PDF Post

Content goes here...' > content/posts/my-post.md
```

```
# 2. Generate site (requires pandoc and typst)
kk
```

```
# 3. Check generated files
ls _site/posts/
# Output: my-post.html, my-post.pdf
```

## Troubleshooting

### Error: "pandoc not found"

- Install pandoc using the instructions above
- Ensure pandoc is in your system PATH

### Error: "typst not found"

- Install typst-cli: `cargo install typst-cli`
- Verify installation: `typst --version`

### PDF links not appearing in HTML

- Ensure `pdf: true` is set in the document's front matter
- Rebuild your site with `kk`
- Check that the PDF file was generated in the output directory

### Images missing in PDF

- Ensure image paths are relative to the content source directory
- Use forward slashes in paths even on Windows
- Verify image files exist at the specified paths

## Error Handling

Krik uses typed errors for clear diagnostics and actionable messages.

### Error Types

- `ConfigError`: configuration files and parsing
- `IoError`: file and directory operations
- `MarkdownError`: front matter and markdown parsing
- `TemplateError`: template compilation and rendering (includes template name)
- `ThemeError`: theme loading and asset handling
- `ServerError`: development server issues
- `ContentError`: content creation and validation failures
- `GenerationError`: site generation pipeline failures

### Exit Codes

The CLI maps error types to exit codes:

- Config (2), I/O (3), Markdown (4), Template (5), Theme (6), Server (7), Content (8), Generation (9)



## Tips

- Use `-v` / `--verbose` for detailed logs
- Error messages include paths/template names for faster troubleshooting

## Theme System

### Light/Dark Mode

#### Automatic Detection:

- Detects OS theme preference via CSS `prefers-color-scheme`
- Supports all major platforms (Windows, macOS, Linux, iOS, Android)
- Real-time updates when OS theme changes

#### Manual Toggle:

- Theme button (🌙 / ☀️) in top navigation
- Saves preference to `localStorage`
- Overrides automatic detection
- Smooth 0.3s transitions

### Customization

The theme uses CSS custom properties for easy customization:

```
:root {
  --bg-color: #ffffff;
  --text-color: #333333;
  --link-color: #0066cc;
  /* ... more variables */
}
```

### Theme Gallery

See all available themes showcased with live previews:

- **Themes Demo:** <https://themes.krik.mirkocaserta.com>

## Command Line Reference

### Main Commands

```
kk [OPTIONS]           # Generate static site
kk init [DIR]           # Initialize new site
kk post [TITLE]         # Create new blog post
kk page [TITLE]         # Create new page
kk server [OPTIONS]     # Start development server
```

## Global Options

Option	Description	Default
-i, --input <DIR>	Input directory	content
-o, --output <DIR>	Output directory	_site
-t, --theme <DIR>	Theme directory	themes/default
-h, --help	Show help	
-V, --version	Show version	

## Init Command

`kk init [DIR] [OPTIONS]`

Option	Description
[DIR]	Directory to initialize (default: current directory)
-f, --force	Overwrite existing files

## Post/Page Commands

`kk post [TITLE] [OPTIONS]`

`kk page [TITLE] [OPTIONS]`

Option	Description	Default
[TITLE]	Content title	"New post" / "New page"
-f, --filename <NAME>	Custom filename (without .md)	Generated from title
--content-dir <DIR>	Content directory path	content

## Server Command

`kk server [OPTIONS]`

Option	Description	Default
-i, --input <DIR>	Input directory	content
-o, --output <DIR>	Output directory	_site
-t, --theme <DIR>	Theme directory	themes/default
-p, --port <PORT>	Server port	3000
--no-live-reload	Disable live reload	Live reload enabled

## Generated Output

Krik generates a complete static site with:

- **HTML files:** Preserving directory structure

- **Language variants:** `file.lang.html` for translations
- **Static assets:** Images, CSS, etc. copied as-is
- **Theme assets:** CSS and JavaScript from theme directory
- **Atom feed:** `feed.xml` with proper link resolution
- **XML sitemap:** `sitemap.xml` with multilingual support
- **robots.txt:** SEO-optimized with sitemap reference
- **Navigation:** TOCs, footnote links, scroll-to-top buttons

### Example Output Structure

```

_site/
├── index.html           # Homepage
├── feed.xml            # Atom feed
├── sitemap.xml         # XML sitemap
├── robots.txt         # SEO robots file
├── assets/            # Theme assets
│   ├── css/main.css
│   └── js/main.js
├── posts/
│   ├── hello.html
│   └── hello.es.html  # Translation
├── pages/
│   └── about.html
└── images/
    └── logo.png       # Static assets

```

## Best Practices

### Content Organization

- Use `posts/` for blog entries and time-sensitive content
- Use `pages/` for static pages like About, Contact, etc.
- Keep assets organized in subdirectories
- Use consistent naming conventions for translations

### Front Matter

- Always include a title for better navigation
- Use date for posts to ensure proper chronological ordering
- Add tags to posts for better categorization
- Enable toc for longer articles with multiple sections

### Performance

- Optimize images before adding to content
- Use appropriate image formats (WebP when possible)
- Keep individual posts/pages to reasonable lengths
- Use drafts (`draft: true`) for work-in-progress content

## Accessibility

- Use proper heading hierarchy (H1 → H2 → H3)
- Include alt text for images
- Ensure good color contrast in custom themes
- Test with keyboard navigation

## Deployment

### GitHub Pages

You can automatically deploy your Krik site to GitHub Pages using GitHub Actions. This workflow will build and deploy your site whenever you push to the main branch.

### Setup Steps

1. **Create the workflow file:** Add `.github/workflows/build-and-deploy.yml` to your repository.
2. **Enable GitHub Pages:**
  - Go to your repository settings
  - Navigate to "Pages" section
  - Under "Source", select "Deploy from a branch"
  - Choose the `gh-pages` branch
  - Select "/" (root) as the folder
  - Click "Save"
3. **Configure your site:** Ensure your content is in the `content/` directory with proper structure
4. **Deploy:** Push to your main branch to trigger the deployment

### What the Workflow Does

The GitHub Actions workflow automatically:

- **Installs dependencies:** Sets up Rust toolchain and installs Krik from `crates.io`
- **Generates the site:** Runs `kk` to build your static site
- **Creates gh-pages branch:** Sets up the deployment branch if it doesn't exist
- **Deploys files:** Copies generated files to the `gh-pages` branch
- **Adds .nojekyll:** Prevents GitHub from processing files with Jekyll
- **Pushes changes:** Commits and pushes the generated site

### Workflow Features

- **Automatic deployment:** Triggers on every push to main branch
- **Manual trigger:** Can be run manually via GitHub Actions interface
- **Branch management:** Handles both new and existing `gh-pages` branches
- **Clean deployment:** Removes old files before deploying new ones
- **Skip empty deployments:** Only commits when there are actual changes

### Repository Structure

Your repository should look like this:

```
your-repository/
├── .github/
│   └── workflows/
│       └── build-and-deploy.yml    # Deployment workflow
├── content/                        # Your Krik content
│   ├── site.toml
│   ├── posts/
│   │   └── *.md
│   └── pages/
│       └── *.md
└── README.md
```

After the first successful deployment, your site will be available at: <https://yourusername.github.io/your-repository-name/>

---

This documentation covers all major features of Krik. For more examples, check out the other posts and pages in this demo site!

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## Document Information

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