



Chapter: The Ignore Crate — Intelligent File Discovery

Overview

The ignore crate is ripgrep's file discovery engine. When you run `rg pattern`, something has to decide which files to search. That "something" is the ignore crate — a sophisticated directory walker that respects gitignore rules, filters by file type, and traverses directories in parallel.

This crate embodies a key insight: **the fastest way to search a file is to not search it at all**. By intelligently filtering files during traversal, ripgrep avoids ever opening files that can't match. This filtering happens at multiple levels: hidden files, gitignore patterns, file type globs, and size limits — all evaluated before any regex touches the file.

The ignore crate is also ripgrep's most reusable component. Unlike grep-searcher or grep-printer which are tightly coupled to search functionality, ignore is a general-purpose library. Other tools like `fd` (a find replacement) use it directly.

What This Crate Provides

The ignore crate offers three main capabilities:

- 1. Recursive Directory Walking** - Sequential iteration via `Walk` - Parallel traversal via `WalkParallel` - Builder pattern for extensive configuration (`WalkBuilder`) - The `WalkState` enum for controlling traversal
- 2. Gitignore Processing** - Parsing `.gitignore`, `.ignore`, and `.rgignore` files - Proper precedence rules (child overrides parent) - Negation patterns (lines starting with `!`) - Global git excludes
- 3. File Type Filtering** - Built-in type definitions (rust, python, c, etc.) - Custom type definitions via `--type-add` - Type selection (`-t`) and negation (`-T`)

Crate Architecture

