GitHub Agentic Workflows

TECHNICAL PREVIEW

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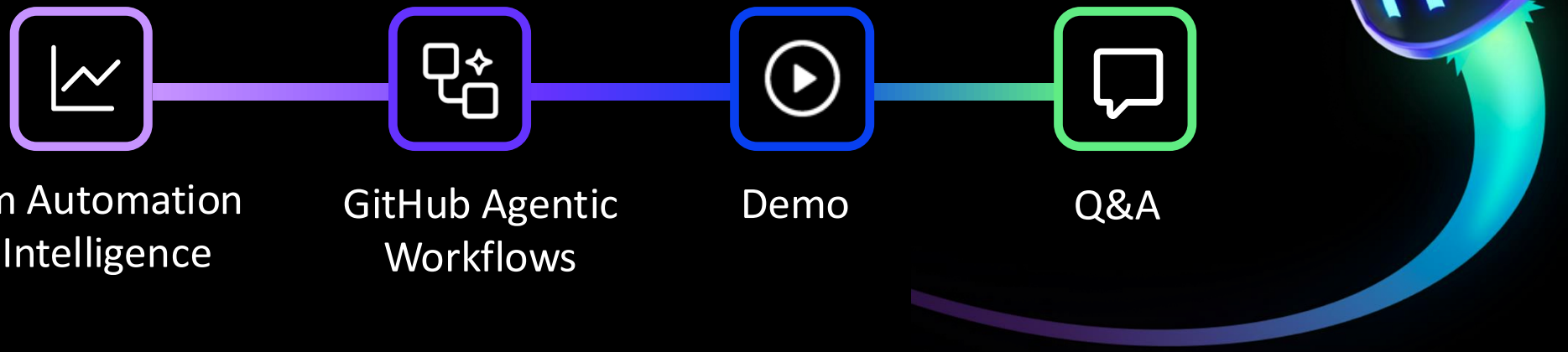
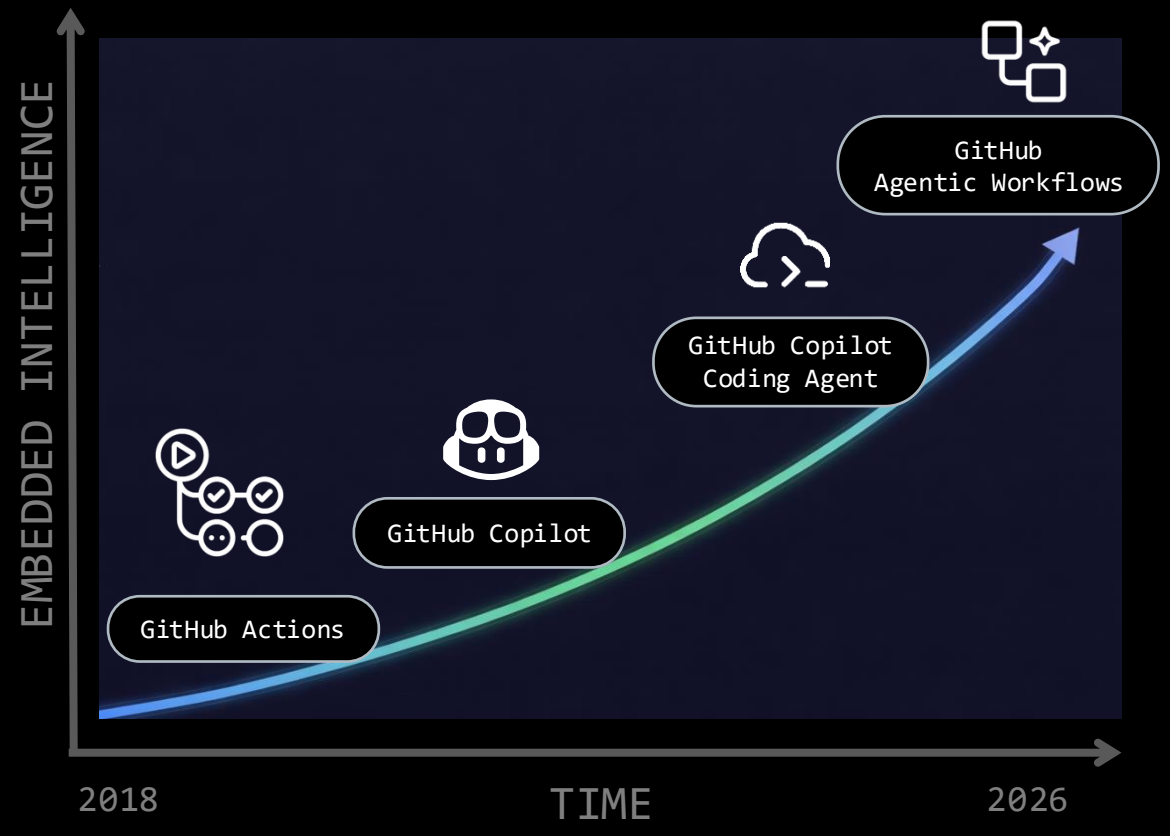
Agenda


From Automation to Intelligence
GitHub Agentic Workflows
Demo
Q&A

From Automation to Intelligence

Embedding intelligence into trusted workflows:

- Automation is the foundation
  2018: Launch of GitHub Actions
- Copilot assists in the editor
  2021: Launch of GitHub Copilot
- Software Engineering (SWE) agents act on tasks
  2025: Launch of GitHub Copilot Coding Agent
- Agentic workflows with built-in intelligence
  2026: Launch of GitHub Agentic Workflows



GitHub Agentic Workflows

Safely combine GitHub Actions & SWE agents using our Command Line Interface (CLI).

Prerequisites:

- AI Account - Assumes GitHub Copilot by default
- GitHub Repository - A repository where you have *write* access
- GitHub Actions enabled
- GitHub CLI (gh) v2.0.0+
- Operating System: Linux, macOS, or Windows with WSL

Setup:

Install the GitHub Agentic Workflows CLI

gh extension install github/gh-aw

GitHub Agentic Workflows

Use frontmatter to define when a workflows runs and what it is allowed to read and write.

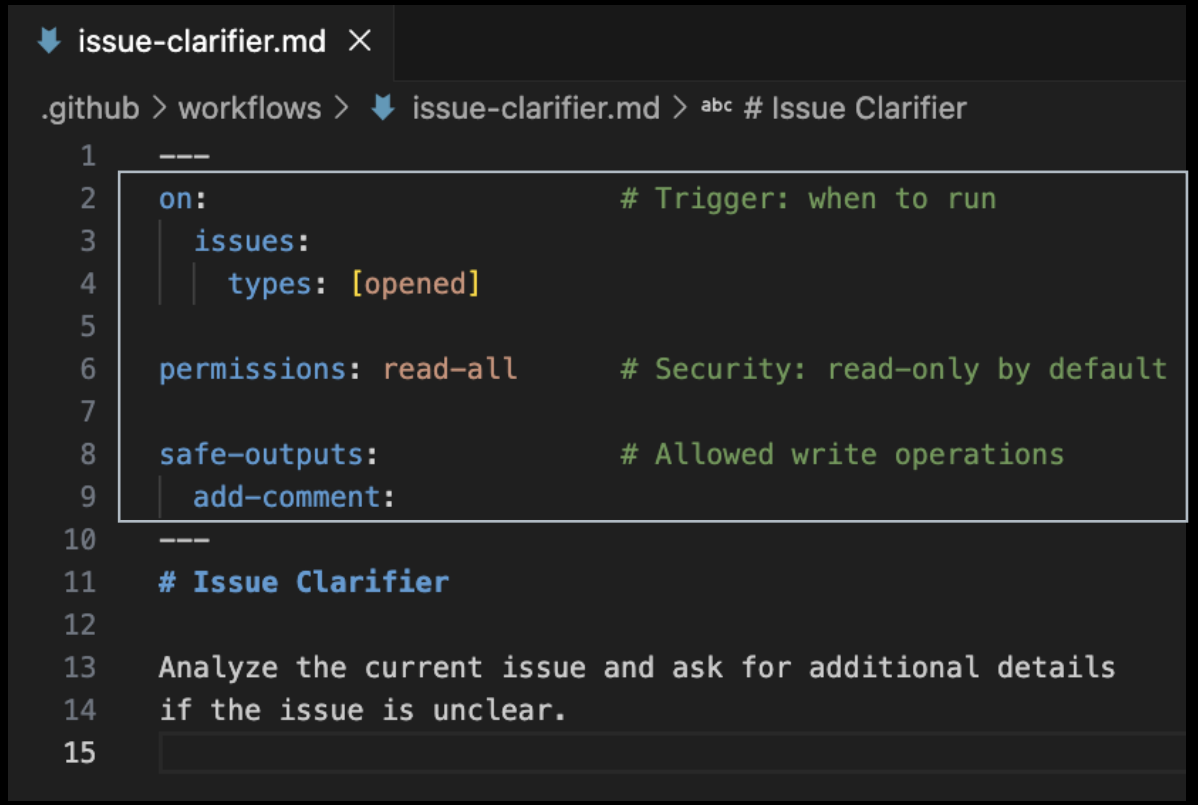
Required:

Trigger configuration: on

Optional:

- AI configuration: engine
- Execution: jobs, concurrency, if
- Capabilities: tools, imports, env
- Metadata: name, description, label, source
- Security & Access: permissions, network, safe-outputs
- Runtime: runs-on, timeout-minutes, environment

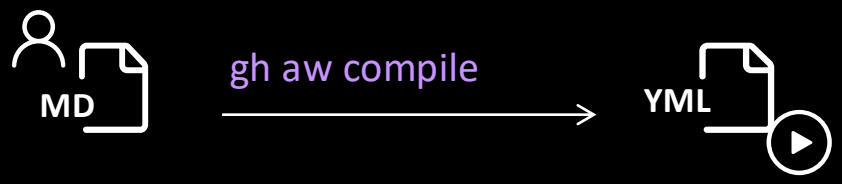
See docs for a full frontmatter reference.



GitHub Agentic Workflows

Write simple markdown to declare your automation needs:

- Write instructions in natural language.
  Markdown file *.md
- Compile to validate and generate an executable workflow.
  Yaml file *.lock.yml



issue-clarifier.md

.github > workflows > issue-clarifier.md > # Issue Clarifier

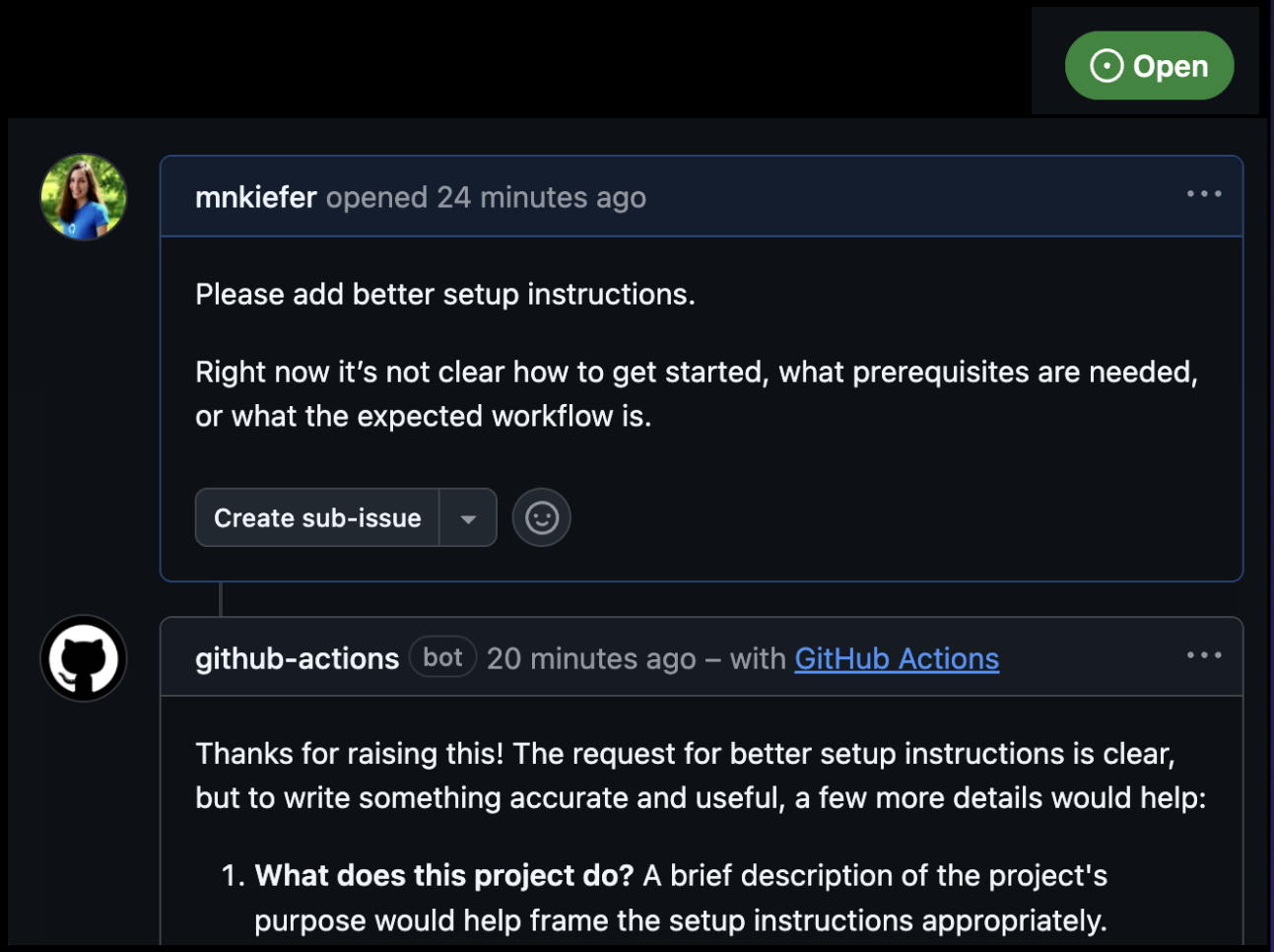
```
1   ---
2   on:                          # Trigger: when to run
3     issues:
4       types: [opened]
5
6   permissions: read-all        # Security: read-only by default
7
8   safe-outputs:                # Allowed write operations
9     add-comment:
10  ---
11  # Issue Clarifier
12
13  Analyze the current issue and ask for additional details
14  if the issue is unclear.
15
```

GitHub Agentic Workflows

With Agentic Workflows, your CI/CD can:

- Understand context
  Read the repository, issues & pull requests, etc.
- Make decisions
  Choose what to do based on the context
  not just predefined conditions.
- Stay on course
  Understand concepts not just GitHub primitives.

Supported AI engines:



GitHub Agentic Workflows

Agentic Workflows put security first:

- **agent**

  Has *read-only* permissions and only proposes actions.

- **detection**

  Threat detection analyses scans the agent output for security issues.

- **safe outputs**

  Run proposed actions in isolated containers.

Learn more by reading about our Security Architecture.

Security Architecture

GitHub Agentic Workflows implements a defense-in-depth security architecture that protects against untrusted Model Context Protocol (MCP) servers and compromised agents. This document provides an overview of our security model and visual diagrams of the key components.

Security Model

Agentic Workflows (AW) adopts a layered approach that combines substrate-enforced isolation, declarative specification, and staged execution. Each layer enforces distinct security properties under different assumptions and constrains the impact of failures above it.

Threat Model

We consider an adversary that may compromise untrusted user-level components, e.g., containers, and may cause them to behave arbitrarily within the privileges granted to them. The adversary may attempt to:

GitHub Agentic Workflows

Agentic Workflows are the building blocks of Continuous AI:

- Reactive Intelligence (ChatOps · IssueOps)
  AI responds to issues, PRs & comments to triage, etc.
- Continuous Improvement (DailyOps · TaskOps)
  Scheduled AI-driven analysis and incremental upgrades.
- Insight & Governance (DataOps · ProjectOps)
  Analyze repository data and automatically update project state.
- Orchestration (MultiRepoOps · CentralRepoOps)
  Coordinate work across repositories with centralized oversight.

And many more! Check out our ”Design Patters”.

Peli’s Agent Factory

GitHub Agentic Workflows

Explore our agentics collection for inspiration.

README | Code of conduct | MIT license | Security

✨ The Agentics

A sample family of reusable GitHub Agentic Workflows.

📂 Available Workflows

Triage Workflows

- 🏷️ Issue Triage - Triage issues and pull requests

Fault Analysis Workflows

- 🏥 CI Doctor - Monitor CI workflows and investigate failures automatically
- 🚀 CI Coach - Optimize CI workflows for speed and cost efficiency

Agentics

Code Review Workflows

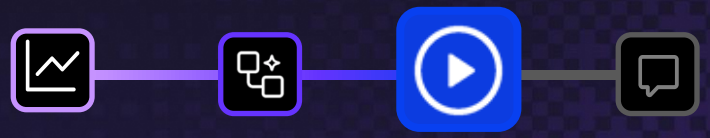
- ✅ Contribution Guidelines Checker - Review pull requests for compliance with contribution guidelines
- 😤 Grumpy Reviewer - On-demand opinionated code review by a grumpy but thorough senior developer

Research, Status & Planning Workflows

- 📚 Weekly Research - Collect research updates and industry trends
- 📊 Weekly Issue Summary - Weekly issue activity report with trend charts and recommendations
- 👥 Daily Repo Status - Assess repository activity and create status reports
- 👥 Daily Team Status - Create upbeat daily team activity summaries with productivity insights
- 📋 Daily Plan - Update planning issues for team coordination

Dependency Management Workflows

- 📦 Dependabot PR Bundler - Create pull requests to bundle together as many dependabot updates as possible
- 📦 Dependabot Issue Bundler - Create issues that group together dependabot updates related to the same ecosystem



Demo

Thank you