MCP Tool - GitHub Copilot Integration

# 1. Introduction

This document describes the latest MCP workflow for multi-module Spring Boot projects integrated with GitHub Copilot. It includes automated Snyk vulnerability checks, Maven builds, regression iterations, PR creation, conflict handling, and IDE repo auto-detection.

# 2. MCP Workflow Features

• IDE repo auto-detection – no need to provide repo\_path if project is open in IDE

• Pre/post Maven builds around Snyk fix

• Snyk fix or wizard execution with 2 regression iterations

• Final fail-safe Snyk check

• Interactive GHCP buttons for PR creation

• Retry loop for push/PR with configurable retry\_count

• Conflict detection with manual alert if merge conflicts occur

• Automatic base branch update before PR creation

• Compatible with multi-module Spring Boot projects

# 3. Available Modes

|  |  |  |
| --- | --- | --- |
| Mode | Description | Buttons/Interaction |
| clone\_build | Clones repo (if needed) + initial Maven build | None |
| snyk\_test | Runs Snyk test only | None |
| snyk\_fix | Pre/post Maven build → Snyk fix/wizard → 2 regression iterations → final Snyk check | ✅ Create PR / ⚠️ Skip PR |
| rebuild | Maven rebuild | None |
| pr | PR creation only | ✅ Create PR / ⚠️ Skip PR |
| all | Full workflow: clone → Maven build → Snyk test → Snyk fix → regression checks → fail-safe | ✅ Create PR / ⚠️ Skip PR |

# 4. Example GHCP Chat Commands

4.1 Full Automated Workflow (auto-detect IDE repo path)

/springboot-snyk-fix.run repo\_path= fix\_mode=fix base\_branch=main new\_branch=feature/snyk-fix pr\_title="Fix vulnerabilities via Snyk" pr\_body="Automatically fixed vulnerabilities using Snyk with regression checks." mode=all retry\_count=3

4.2 Run Only Snyk Fix

/springboot-snyk-fix.run repo\_path= fix\_mode=fix base\_branch=main new\_branch=feature/snyk-fix pr\_title="Snyk Fix Only" pr\_body="Running Snyk fix only with pre/post Maven build and regression checks." mode=snyk\_fix retry\_count=3

4.3 Custom Multi-Mode Workflow

/springboot-snyk-fix.run repo\_path=/Users/me/projects/my-repo fix\_mode=wizard base\_branch=main new\_branch=feature/custom pr\_title="Custom workflow fix" pr\_body="Using Snyk wizard and custom modes" mode=clone\_build,snyk\_test,snyk\_fix,pr retry\_count=3

# 5. Quick Tips for Developers

• Leave repo\_path empty to auto-detect IDE project path.

• Use comma-separated modes to run multiple steps at once.

• Set fix\_mode to 'fix' for automatic Snyk fix or 'wizard' for guided Snyk wizard.

• Adjust retry\_count if network or PR push often fails.

• Interactive PR buttons allow safe creation or skipping of PR.

# 6. Latest Revision Version

MCP Workflow Version: 1.0.0 (Latest Revision with IDE auto-detection, full Snyk + Maven + PR workflow)