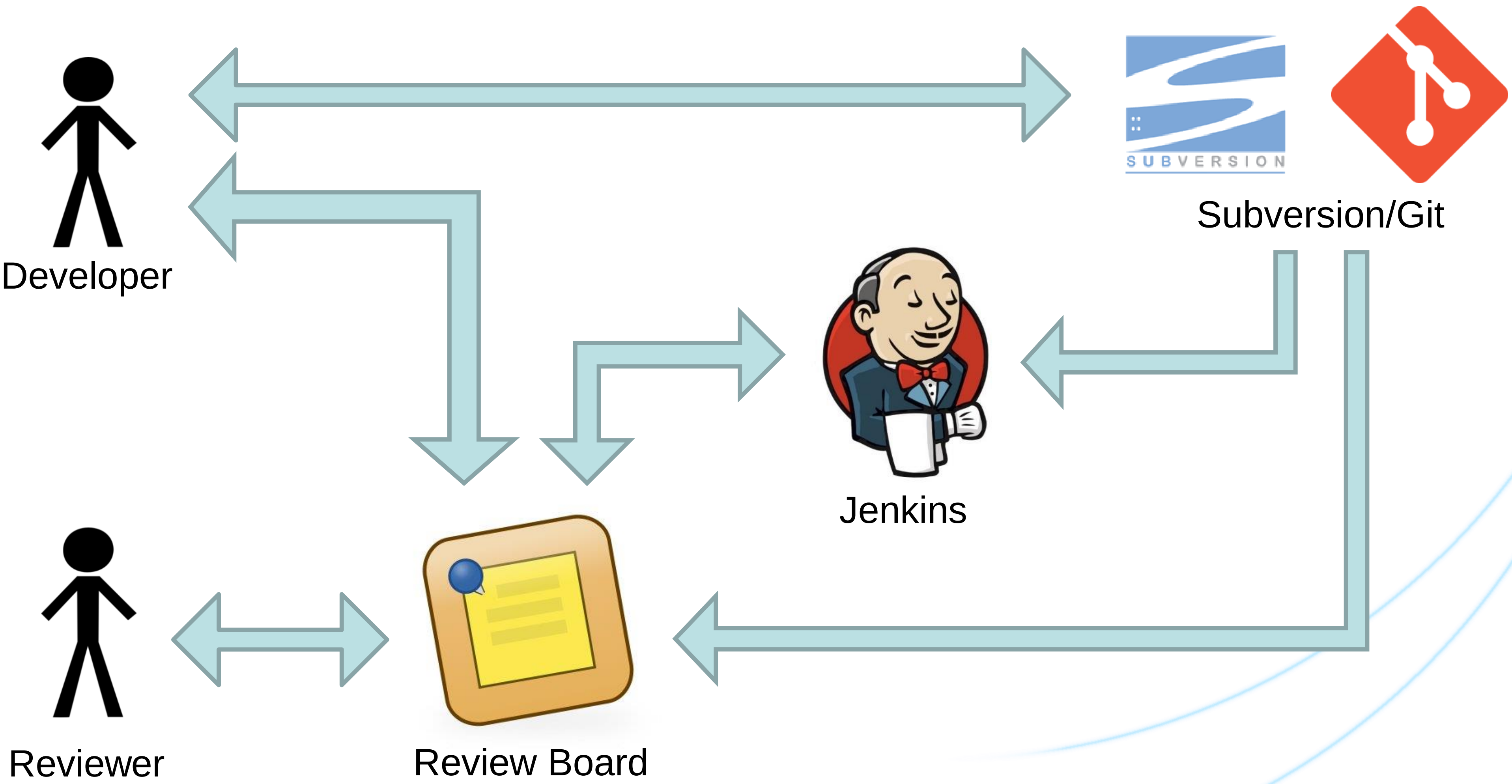
CI in ITDev

- Software engineering
    - Used internally for client portal builds
    - Used internally for product development
        - Algorithm performance testing
    - Used on client projects
        - Static code analysis
        - Documentation
        - Unit testing

- Electronic engineering
    - Used on client projects
        - Static code analysis
        - Simulations
        - Synthesis with timing reports

CI Tools


Developer
SUBVERSION
Subversion/Git
Jenkins
Reviewer
Review Board

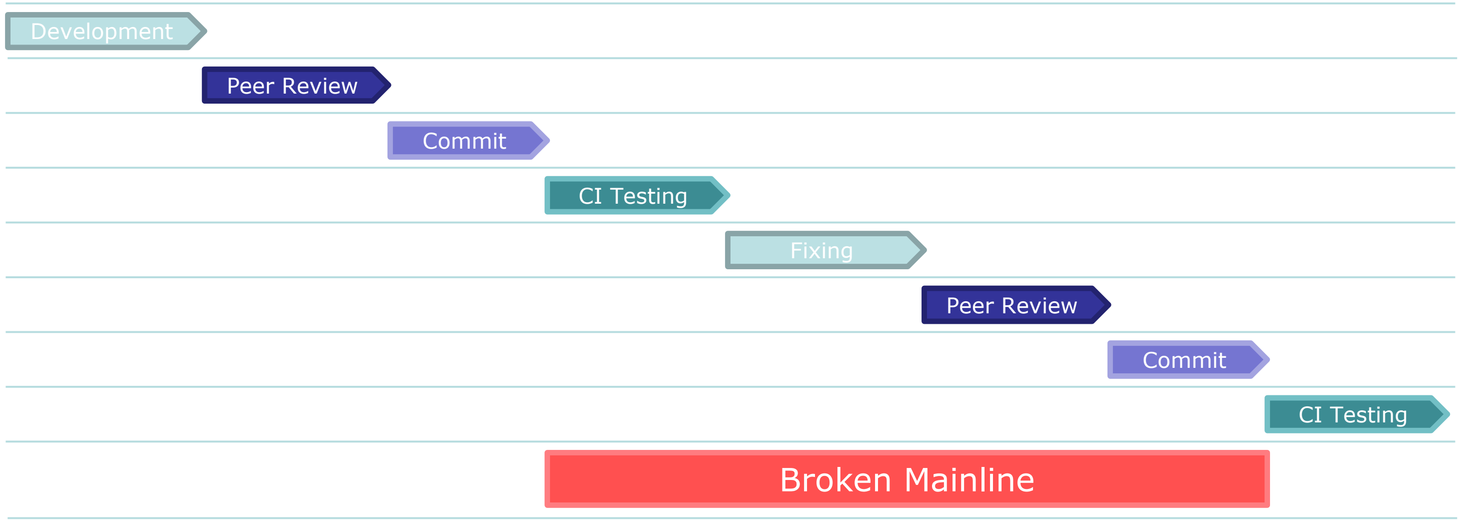
CI Challenges

- **Resolved**
  - Problems are detected but sometimes too late?
  - Maintenance and diverging projects
  - Performance testing

- **Open**
  - Plugins are often out of date and buggy
  - Convincing clients of the benefits

CI in the loop

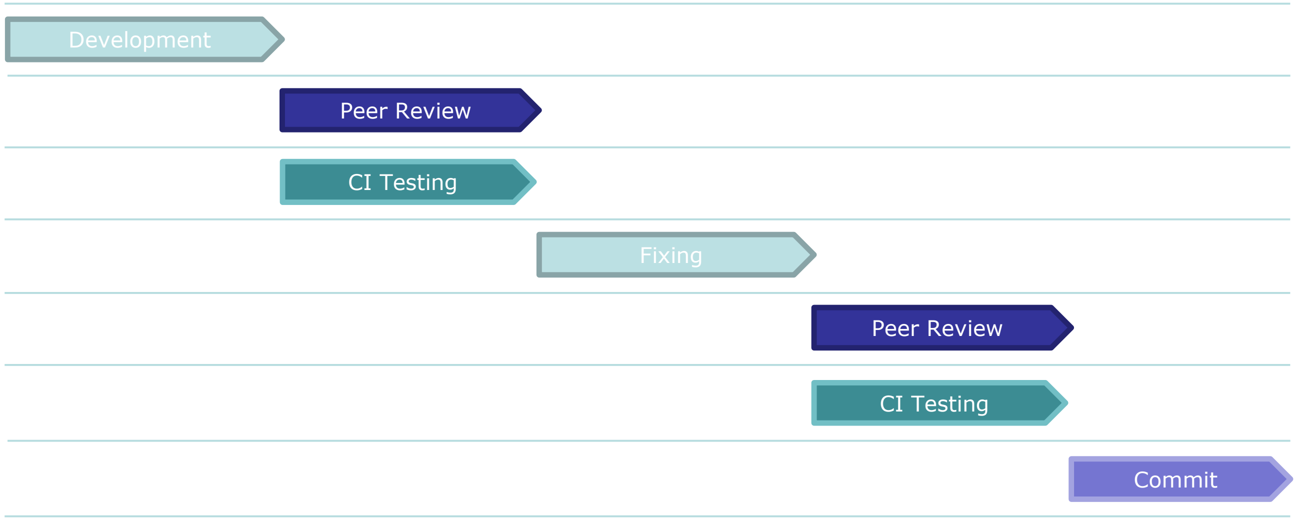
- A typical feature development flow with CI testing changes to mainline



- During this feature development the following occurred
  - 2 peer review requests created
  - 2 pushes to mainline
  - Mainline **broken** for a period of time!

CI in the loop

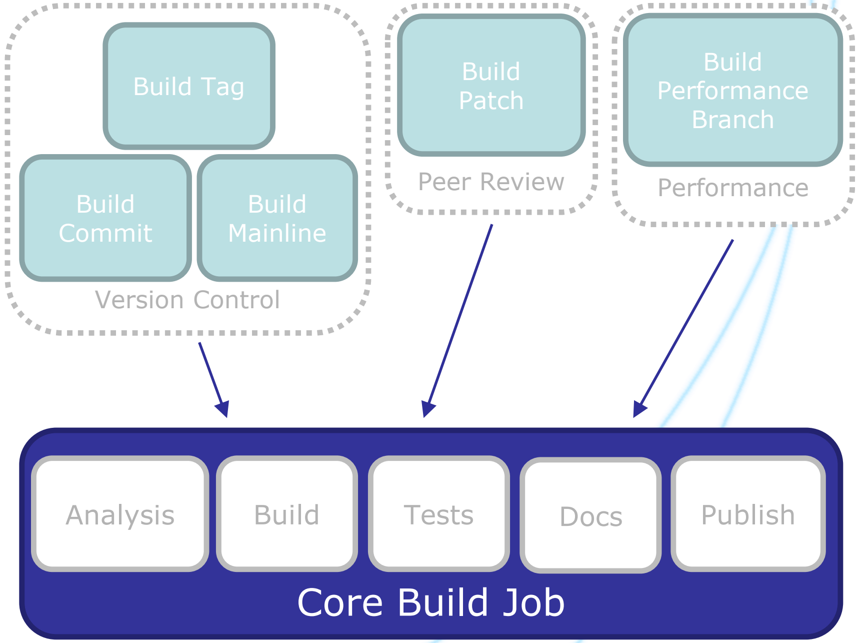
- Bringing CI in to the loop



- CI testing is performed in parallel with peer review
- Issues are found sooner
- For the same feature:
  - Single review request
  - Single push
  - No broken mainline!

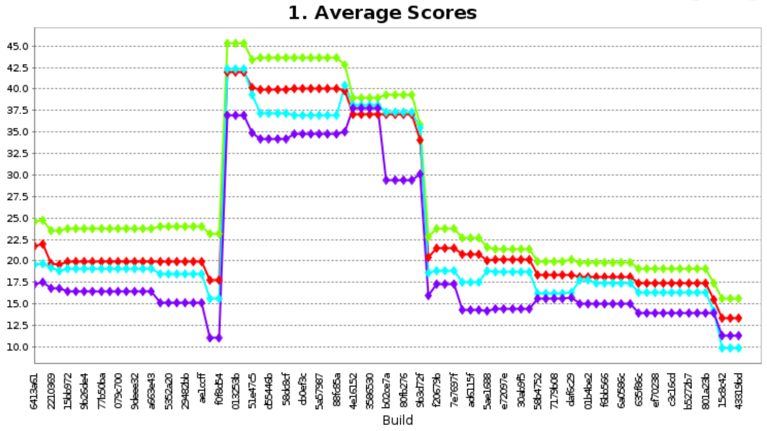
CI maintenance

- Job templates
  - Quick and simple setup for new projects
- Job sharing
  - Using core build jobs to share across multiple triggers
- Revision control
  - Store job configurations under revision control

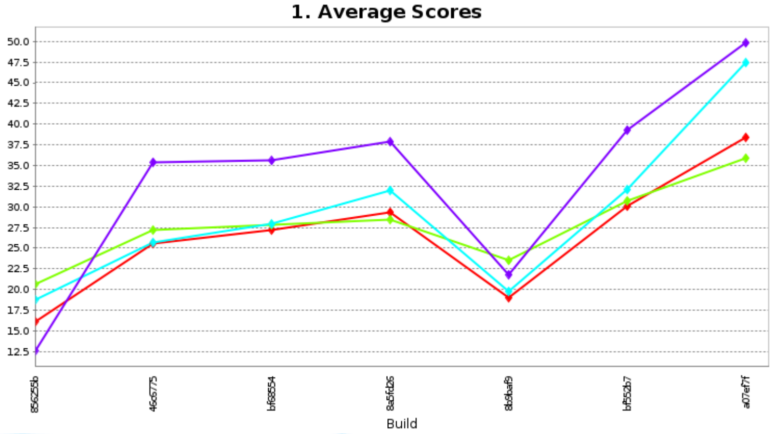


Performance testing

- Tracking mainline algorithm performance
  - Quickly highlights algorithmic regressions



- Extended to development branches
  - Algorithm ideas can be tested and charted with ease
  - Parameters can be tuned for optimal performance using test sweeps



Questions?