

# Commit Conflicts

## Introduction

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### Page description:

In this survey, we assess the frequency, cause, and nature of merge conflicts in the context of version-control systems.

There are 35 small questions – when asked for numbers, a rough estimate is sufficient. You can leave comments on most questions, but you do not have to. Also, each question is optional.

Your data will of course be anonymized.

If you are interested in the results, you can leave your e-mail address at the end of this survey.

If you have any questions, please contact us.

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1. In your opinion, what are typical factors and situations that most likely lead to merge conflicts?

## Conflicts

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**Page description:**

**We have some questions regarding commit conflicts that you encountered. If you are working on more than one project, please consider the project you mainly work on. All questions are optional.**

2. What is done in your project to prevent/reduce conflicts?

3. What is the policy on how to deal with conflicts?

4. Do you sometimes avoid a pull/update because of potential conflicts?

Yes

No

Optional Comments:

5. How often do conflicts occur?

Almost never

Not so often

Sometimes

Very often

Almost at each  
commit

Optional Comments:

6. How large are the conflicts typically?

Small

Medium

Large

Optional Comments:

7. Where do conflicts typically occur?

Only in one file

In more than one file

Optional Comments:

8. How long does it take to resolve a typical conflict?

- < 5 minutes
- 6 to 30 minutes
- > 30 minutes
- > 1 hour

Optional Comments:

9. What induces conflicts in your project?

- Organization (or lack of it, that is)
- Wrong use of version-control system
- Commit size
- Number of commits
- Time between synchronization
- Heterogeneous environments (different OS, editors/IDEs, ...)
- Customer specifications
- Release pressure
- Conflicts on a certain day of the week (e.g., fridays)
- Other:

Optional Comments:

10. Of what kind are typical conflicts?

- Formatting
- Changed interface
- Renaming
- Type changes (like int to double)
- Refactoring
- Bug fixes
- Documentation
- Other:

Optional Comments:

11. Do you see any relations between causes and different types of conflicts?

12. Which kind of conflicts do you find most difficult to resolve? Do you see a pattern?

13. Are there hotspots for conflicts in the code-base, i.e. are there regions or files that are very often part of conflicts?

Yes

No

Optional Comments:

14. Are the same or different developers causing most of the conflicts?

Same developers

Different developers

Optional Comments:

15. In your opinion, what could be done to improve the situation?

## **Project-Specific Questions**

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**Page description:**

**Now for some project-specific questions.**

**If you are working on more than one project, please consider the project you mainly work on.**

**All questions are optional.**

16. Which version-control system(s) do you use?

- Git
- Mercurial
- Subversion
- CVS
- Bazaar
- DARCS
- BitKeeper
- Perforce
- Other:

17. How many developers work on your project?

- 1 to 2
- 3 to 5
- 6 to 10
- 11 to 30
- 31 to 50
- 51 to 100
- 101 to 500
- > 500

18. With how many developers do you typically collaborate?

- None
- 1 or 2
- 3 to 5
- 6 to 10
- 11 to 20
- > 20

19. How often does a commit occur from anybody on the project?

- Daily
- Weekly
- Monthly
- Other:

20. How large is a typical commit? (number of changed lines)

- Less than 5 LOC
- 5 to 20 LOC
- > 20 LOC
- > 50 LOC
- > 100 LOC

Optional Comments:

21. How often does a release occur?

22. What commit policies are typically enforced?

- Must build
- Must adhere to coding style
- Must pass test suite
- Must pass code review
- Other:

Optional Comments:

23. Are there branches or forks/clones of your project?

Number of branches:

Number of forks/clones:

24. Are there forks or clones of your project that are maintained by a different community/company?

Yes

No

Optional Comments:

25. What are the release policies? Which criteria must be fulfilled before the release? (E.g. no critical bugs, code reviews, testing by customer)

26. What describes your development model best?

Agile

Waterfall

"Code and fix"

Other:

## Personal Information

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### Page description:

Finally, some personal background information to set your responses into context. If you are working on more than one project, please consider the project you mainly work on.

All questions are optional.

### 27. Gender:

- Male
- Female

### 28. Age:

### 29. Educational Background:

- No degree
- Bachelor's Degree
- Master's Degree
- Ph.D.
- Other:

### 30. Education Background: Area (e.g., computer science):

31. Since how many years are you programming professionally?

32. With how many programming languages do you have passing familiarity? (Rough estimate)

33. What is the size of the project you work on?

- Small (< 900 lines of code)
- Medium (900 - 45 000 lines of code)
- Large (> 45 000 lines of code)

34. Are you working on an open-source project or a proprietary project?

- Open-source project
- Proprietary project

35. What's the domain of your project (e.g., database, embedded system)  
If multiple domains apply, please separate each domain by comma.

**Further Comments**

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36. Do you have any further comments on commit conflicts or this survey?

37. You can leave your e-mail address if you are interested in the results (but of course you do not have to):

Thank you very much for you time. We highly appreciate your input.

If you have any questions, please contact us.

[Olaf Leßenich](#)<sup>1</sup>, [Janet Siegmund](#)<sup>1</sup>, [Christian Kästner](#)<sup>2</sup>, [Sven Apel](#)<sup>1</sup>, [Claus Hunsen](#)<sup>1</sup>

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**Thank You!**

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Thank you for taking our survey.