

EDIT - bug #8105

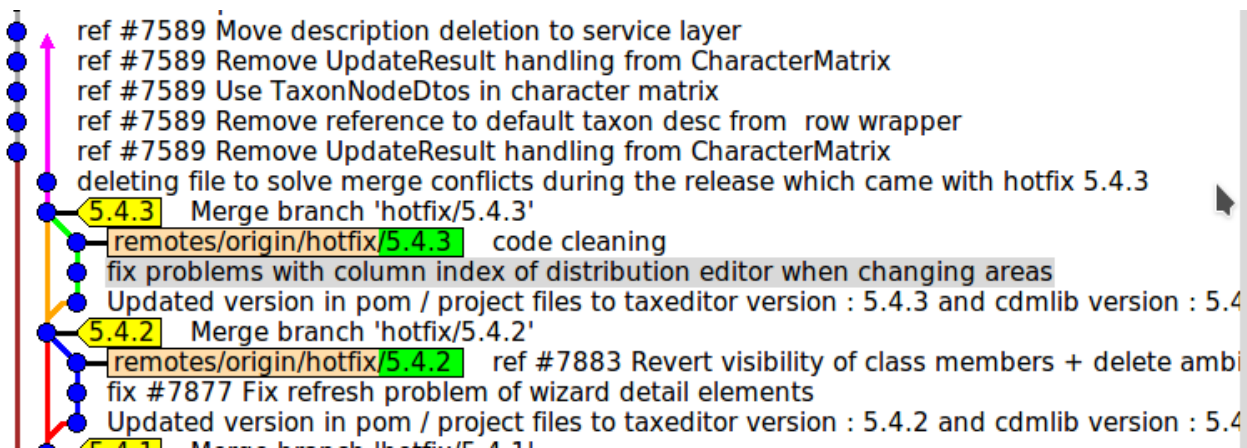
better hotfix branch strategy in git flow to avoid commits in master which are missing in develop

02/18/2019 12:22 PM - Andreas Kohlbecker

Status:	In Progress	Start date:	
Priority:	Priority14	Due date:	
Assignee:	Andreas Kohlbecker	% Done:	60%
Category:	devOps	Estimated time:	0:00 hour
Target version:	Release 5.45	Found in Version:	
Severity:	major		

Description

During the release of the taxeditor 5.5.0 it turned out, that the masterbranch has received commits from the hotfix/* barnch, which are not yet in den develop`:



In this commit the file

`eu.etaxonomy.taxeditor.editor/src/main/java/eu/etaxonomy/taxeditor/editor/view/checklist/e4/ChecklistEditorE4.java` has been deleted.

This situation finally lead to a conflict when merging the release branch to master.

The git flow scheme clearly recommends merging all changes made to a hotfix branch back to develop. But this can not be done automatically since merge conflicts can are to be expected in this step with high propability.

A good strategy could be to verify just before finalizing the hotfix branch that all changes in the hotfix/* branch have been incorporated into develop. The git command `cherry` can be used to find commits that have been missed out.

This is illustrated here by a simple example:

- hotfix branch 5.5.1 created
- adding commit to develop: c6191df
- adding commit to hotfix/5.5.1 : 305c21a (changes same line)

```

* c6191df - Mon, 18 Feb 2019 11:53:24 +0100 (18 minutes ago) (HEAD -> develop)
| test commit in develop - Andreas Kohlbecker
* 3c6137b - Thu, 14 Feb 2019 10:30:40 +0100 (4 days ago) (origin/develop)
| Merge branch 'release/5.5.0' into develop - jenkins
* 70675b1 - Thu, 14 Feb 2019 09:41:58 +0100 (4 days ago)
| updating poms for 5.6.0-SNAPSHOT development - jenkins
| * 305c21a - Mon, 18 Feb 2019 11:52:46 +0100 (19 minutes ago) (hotfix/5.5.1)
| | test commit in hfx - Andreas Kohlbecker
| * 079231b - Thu, 14 Feb 2019 10:30:39 +0100 (4 days ago) (tag: 5.5.0, origin/master, origin/HEAD, master)
| | jenkins merging release branch into master (strategy: theirs) - jenkins
| |
| |
| |
| * b8f9208 - Thu, 14 Feb 2019 10:27:14 +0100 (4 days ago)
| | updating poms for branch'release/5.5.0' with non-snapshot versions - jenkins
| * 37df124 - Thu, 14 Feb 2019 10:27:02 +0100 (4 days ago)
| | jenkins bumping cdmlib.version to 5.5.0 - jenkins
| * 5db4b0f - Thu, 14 Feb 2019 09:42:03 +0100 (4 days ago)
| | jenkins bumping cdmlib.version to 5.5.0-SNAPSHOT - jenkins
| * b9033cb - Thu, 14 Feb 2019 09:41:50 +0100 (4 days ago)
| | jenkins bumping cdmlib.version to 5.6.0-SNAPSHOT - jenkins
| * d096791 - Mon, 11 Feb 2019 14:40:49 +0100 (7 days ago)
| | fix #8090 fixing missing inProceedings label in reference editor - Andreas Kohlbecker

```

```

: git cherry develop hotfix/5.5.1
+ 305c21a613ed15268555559f1bdda4eaaed236b

```

Shows that exactly one commit is missing in develop

After merging hotfix/5.5.1 into develop and resolving the conflicts git cherry does not report any missing cherries.

**And the case which caused the problem during the release:*

```

* 2c28be6 - Mon, 17 Dec 2018 07:38:21 +0100 (9 weeks ago)
| ref #7589 Remove UpdateResult handling from CharacterMatrix - Patrick Plitzner
* b3b4929 - Thu, 14 Feb 2019 14:39:01 +0100 (4 days ago)
| deleting file to solve merge conflicts during the release which came with hotfix 5.4.3 - Andreas Kohlbecker
* 7e44548 - Fri, 16 Nov 2018 15:20:45 +0100 (3 months ago) (tag: 5.4.3)
| Merge branch 'hotfix/5.4.3' - jenkins
| * 5cb02a2 - Fri, 16 Nov 2018 14:37:11 +0100 (3 months ago) (origin/hotfix/5.4.3)
| | code cleaning - Katja Luther
| * 8f3316f - Fri, 16 Nov 2018 13:57:16 +0100 (3 months ago)
| | fix problems with column index of distribution editor when changing areas - Katja Luther
| * e663916 - Fri, 16 Nov 2018 13:42:39 +0100 (3 months ago)
| | Updated version in pom / project files to taxeditor version : 5.4.3 and cdmlib version : 5.4.0 - jenkins
| * 92f149d - Fri, 2 Nov 2018 12:20:33 +0100 (4 months ago) (tag: 5.4.2)
| | Merge branch 'hotfix/5.4.2' - jenkins

```

develop

in this case we need to focus only to the current hotfix branch and will also specifying the <limit> argument for the cherry command:

```

: git cherry 2c28be6 5cb02a2 92f149d1f
+ e663916103a3e688714d14546aa664cef7f011c6
+ 8f3316f456dcafad1b9105ce2323cce5f915fbl1a
+ 5cb02a236f205fd9c7b0b31d3b77fc24c7f8d99d

```

Without the limit git cherry would have reported all commit that once have been missed to integrate into develop of which many are no longer relevant for the actual release.

In the above example I needed to use the commit hashes since I was examining a historic situation. At the time of finalizing the hotfix release the command would have been:

```
git cherry develop hotfix/5.4.3 master
```

The only problem that needs to be solved is that we need to ignore the first commit in the hotfix branch since this is the commit by which the project version has been bumped by jenkins.

The first commit in a branch created by the release pipeline in jenkins can be found by e.g.:

```
git log --pretty=format:"%h" --author=jenkins master..hotfix/5.5.1 | tail -n 1
```

HOW to use the git-hfx-cherry-check.sh script

assuming you have checked out the svn repository <https://dev.e-taxonomy.eu/svn/trunk/server-scripts> at ~/opt/server-scripts you can use the script in the following way:

```
~/opt/server-scripts/jenkins-ci/git-hfx-cherry-check.sh <hotfix-branch>
```

Related issues:

Related to EDIT - feature request #7110: taxeditor hotfix script gitflow-fini...

New

History

#1 - 02/18/2019 12:40 PM - Andreas Kohlbecker

- File *picture205-1.png* added
- Description updated

#2 - 02/18/2019 12:47 PM - Andreas Kohlbecker

- Description updated

#3 - 02/18/2019 02:39 PM - Andreas Kohlbecker

- Description updated

#4 - 02/18/2019 03:00 PM - Andreas Kohlbecker

- Description updated

#5 - 02/18/2019 03:12 PM - Andreas Kohlbecker

- Description updated

#6 - 02/21/2019 03:22 PM - Andreas Kohlbecker

- % Done changed from 0 to 40

Script to check for cherries in the HFX Finish jobs created: <https://dev.e-taxonomy.eu/svn/trunk/server-scripts/jenkins-ci/git-hfx-cherry-check.sh>

#7 - 02/21/2019 03:36 PM - Andreas Kohlbecker

and ... using git-hfx-cherry-check.sh in gitflow-finish.sh and maven-gitflow-HOTFIX-finish.sh

#8 - 02/21/2019 03:40 PM - Andreas Kohlbecker

- Status changed from *New* to *Resolved*
- % Done changed from 40 to 50

by this the git-hfx-cherry-check should be executed for all HFX_FINISH jobs, in case of errors the job will FAIL since the script exist with error code (2)

#9 - 02/21/2019 03:50 PM - Andreas Kohlbecker

- Description updated

note for developers added to the ticket description

#10 - 02/22/2019 08:58 AM - Andreas Kohlbecker

- Description updated

#11 - 02/22/2019 03:41 PM - Andreas Kohlbecker

- Status changed from *Resolved* to *Closed*
- Target version deleted (*Release 5.6*)
- % Done changed from 50 to 100

#12 - 02/25/2019 04:00 PM - Andreas Kohlbecker

- Status changed from *Closed* to *In Progress*
- Target version set to *Release 5.6*
- % Done changed from 100 to 60

it turned out that it can happen that cherries need to be modified when picking them from hotfix to develop. This happens for example when the cherry being picked is causing a conflict. the git cherrycommand will no longer detect the cherries as identical. to circumvent problems stemming from this we discussed two optional strategies:

Ich denke es ist wichtig, dass wir diesen check der cherries haben, so werden wir auf mögliche Fehler aufmerksam aber **wir sollten A) auch zulassen, dass bestimmte commits ignoriert werden können.**

B) Alternativ sollten wir uns aber über ein anderes Branchingmodel für die Hotfixes Gedanken machen. Vielleicht so:

- hotfix branches werden nicht nach master gemerged, aber wir behalten den cherry-check bei, dieser führt aber nicht zum einem FAILED des jobs sondern es gibt lediglich einen Report über cherries die nicht nach develop integriert wurden.
- Als Entwickler muss man sich diesen Report ansehen und entscheiden ob diese Commits für develop relevant sind oder nicht.

Nachlesen über die Hotfix-Problematik bei git flow sollten wir auch um zusehen ob andere das selbe Problem haben oder hatten, und zu welchen Lösungen die gekommen sind.

#13 - 03/04/2019 12:01 PM - Andreas Kohlbecker

- Priority changed from New to Priority14

#14 - 03/12/2019 08:26 AM - Andreas Kohlbecker

- Related to feature request #7110: taxeditor hotfix script gitflow-finish.sh must not merge back to develop by default added

#15 - 03/12/2019 08:36 AM - Andreas Kohlbecker

- Description updated

I did a brief research on the topic of hotfix branches:

1. git flow has the concept of **support branches** by which hot fix releases for earlier versions can be maintained (see second link below for details)
2. also interesting is that you can allow for multiple hotfix branches at the same time with Git Flow: git config --add gitflow.multi-hotfix true

for further reading on these topics you may want to follow these links

- <https://stackoverflow.com/questions/16386323/following-git-flow-how-should-you-handle-a-hotfix-of-an-earlier-release>
- <https://gitversion.readthedocs.io/en/latest/git-branching-strategies/gitflow-examples/#support-branches>

#16 - 04/11/2019 05:40 PM - Andreas Kohlbecker

- Target version changed from Release 5.6 to Release 5.7

#17 - 05/06/2019 10:17 AM - Andreas Müller

- Target version changed from Release 5.7 to Release 5.8

#18 - 07/19/2019 03:07 PM - Andreas Kohlbecker

- Target version changed from Release 5.8 to Release 5.10

#19 - 09/20/2019 05:37 PM - Andreas Kohlbecker

- Target version changed from Release 5.10 to Release 5.11

#20 - 11/04/2019 12:29 PM - Andreas Müller

- Target version changed from Release 5.11 to Release 5.12

#21 - 12/03/2019 11:39 AM - Andreas Kohlbecker

- Target version changed from Release 5.12 to Release 5.13

#22 - 03/10/2020 10:03 AM - Andreas Kohlbecker

- Target version changed from Release 5.13 to Release 5.15

#23 - 03/10/2020 10:20 AM - Andreas Müller

- Subject changed from better hotfix branch stragey in git flow to avoid commits in master which are missing in develop to better hotfix branch strategy in git flow to avoid commits in master which are missing in develop

#24 - 06/09/2020 05:58 PM - Andreas Kohlbecker

- Target version changed from Release 5.15 to Release 5.18

#25 - 12/01/2020 03:14 PM - Andreas Kohlbecker

- Target version changed from Release 5.18 to Release 5.19

#26 - 01/27/2021 03:23 PM - Andreas Kohlbecker

- Target version changed from Release 5.19 to Release 5.21

#27 - 01/29/2021 09:25 AM - Andreas Kohlbecker

- Tags set to git

#28 - 03/10/2021 03:30 PM - Andreas Kohlbecker

- Target version changed from Release 5.21 to Release 5.22

#29 - 04/14/2021 05:20 PM - Andreas Kohlbecker

- Target version changed from Release 5.22 to Release 5.45

Files

picture794-1.png	67.7 KB	02/18/2019	Andreas Kohlbecker
picture794-2.png	133 KB	02/18/2019	Andreas Kohlbecker
picture205-1.png	96 KB	02/18/2019	Andreas Kohlbecker