{{lastupdated_at}} by {{lastupdated_by}}

# Central repository workflow for maintainers

This page describes the integration workflow for maintainers. In summary, the following steps are to be executed:

1. Clone central GammaLib repository
2. Integrate feature branch
3. Verify the integration
4. Merge feature into devel
5. Delete the feature branch

## Clone central GammaLib repository

As first step, a clone of the central GammaLib repository is needed:

```
$ git clone https://manager@cta-git.irap.omp.eu/gammalib
  Cloning into 'gammalib'...
  Password:
  remote: Counting objects: 22150, done.
  remote: Compressing objects: 100% (7596/7596), done.
  remote: Total 22150 (delta 17330), reused 18491 (delta 14497)
  Receiving objects: 100% (22150/22150), 80.12 MiB | 192 KiB/s, done.
  Resolving deltas: 100% (17330/17330), done.
```

where manager is the user name of the integration manager.

## Integrate feature branch

### Rebase or merge

If there are only a few commits, consider rebasing to upstream:

```
$ git checkout 007-my-new-feature
$ git fetch origin
$ git rebase origin/devel
```

If there are a longer series of related commits, consider a merge instead:

```
$ git checkout 007-my-new-feature
$ git merge --no-ff origin/devel
```

Note the --no-ff above. This forces git to make a merge commit, rather than doing a fast-forward, so that these set of commits branch off devel then rejoin the main history with a merge, rather than appearing to have been made directly on top of devel.

### Check the history

Now, in either case, you should check that the history is sensible and you have the right commits:

```
$ git log --oneline --graph
$ git log -p origin/devel..
```

The first line above just shows the history in a compact way, with a text representation of the history graph. The second line shows the log of commits excluding those that can be reached from devel (origin/devel), and including those that can be reached from current HEAD (implied with the .. at the end). So, it shows the commits unique to this branch compared to devel. The -p option shows the diff for these commits in patch form.

## Merge into integration branch

Now it's time to merge the feature branch in the integration branch:

```
$ git checkout integration
  Branch integration set up to track remote branch integration from origin.
  Switched to a new branch 'integration'
$ git merge 007-my-new-feature
  Updating ccba491..623d38d
  Fast-forward
  .gitignore               |  20 ++++++++---
  pyext/GDerivative.i      |  77 +++++++++++++++++++++++++++++++++++++++++++++++
  pyext/GFunction.i        |  46 ++++++++++++++++++++++++++
  pyext/gammalib/numerics.i |   2 +
  4 files changed, 139 insertions(+), 6 deletions(-)
  create mode 100644 pyext/GDerivative.i
  create mode 100644 pyext/GFunction.i
$ git push origin integration
  Password:
  Counting objects: 7, done.
  Delta compression using up to 4 threads.
  Compressing objects: 100% (4/4), done.
  Writing objects: 100% (4/4), 392 bytes, done.
  Total 4 (delta 3), reused 0 (delta 0)
  remote: To https://github.com/gammalib/gammalib.git
  remote:   ccba491..623d38d  integration -> integration
  remote:   065af59..8c6cc48  github/007-my-new-feature -> github/007-my-new-feature
  To https://jknodlseder@cta-git.irap.omp.eu/gammalib
    ccba491..623d38d  integration -> integration
```

## Verify the integration

The push will automatically launch the [integration pipeline on Jenkins](integration pipeline on Jenkins).

You should verify the all checks are passed with success.

## Merge feature into devel

Once the new feature is validated, merge the feature in the devel branch:

```
$ git checkout devel
  Switched to branch 'devel'
$ git merge integration
  Updating cb9b2fe..623d38d
  Fast-forward
  pyext/GFunction.i |   1 -
  1 files changed, 0 insertions(+), 1 deletions(-)
$ git push origin
  Total 0 (delta 0), reused 0 (delta 0)
  remote: To https://github.com/gammalib/gammalib.git
  remote:   cb9b2fe..623d38d  devel -> devel
  remote:   ccba491..623d38d  github/integration -> github/integration
  To https://jknodlseder@cta-git.irap.omp.eu/gammalib
    cb9b2fe..623d38d  devel -> devel
```

# Delete the feature branch

```
$ git checkout devel
  Already on 'devel'
$ git branch -D 007-my-new-feature
  Deleted branch 007-my-new-feature (was 816ac2c).
$ git push origin :007-my-new-feature
  Password:
  remote: To https://github.com/gammalib/gammalib.git
  remote:  - [deleted]        007-my-new-feature
  remote:    cb9b2fe..623d38d  github/devel -> github/devel
  To https://jknodlseder@cta-git.irap.omp.eu/gammalib
   - [deleted]        007-my-new-feature
```

Note the colon : before 007-my-new-feature. See also: http://github.com/guides/remove-a-remote-branch