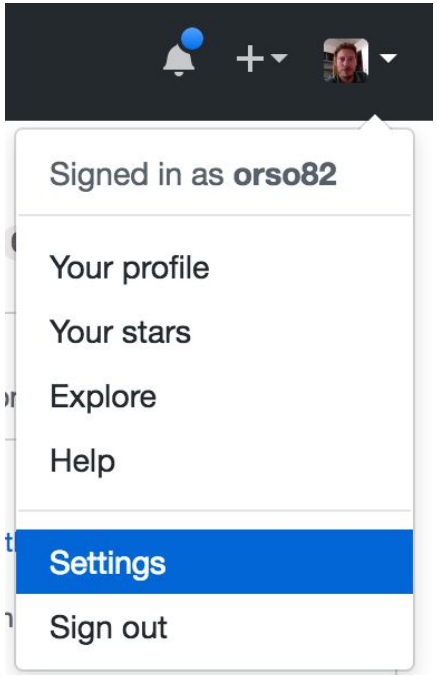
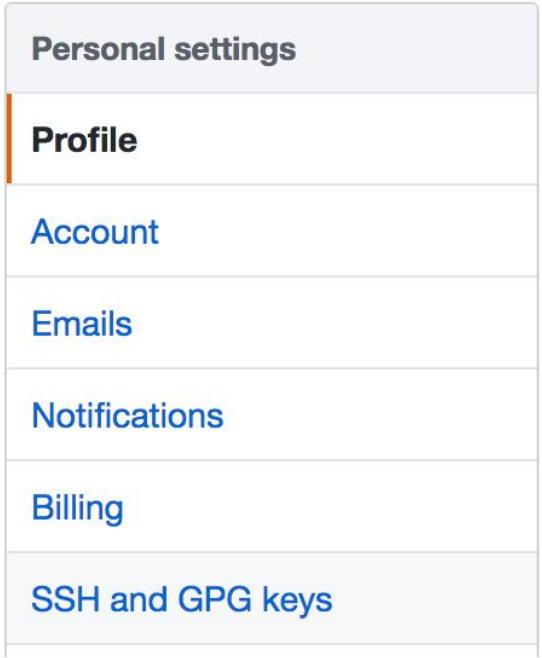
OMFIT + git/GitHub

Setup your SSH keys on GitHub

This needs to be done only once, whether you use the gafusion repository or your own fork





SSH keys

New SSH key

Setup GIT

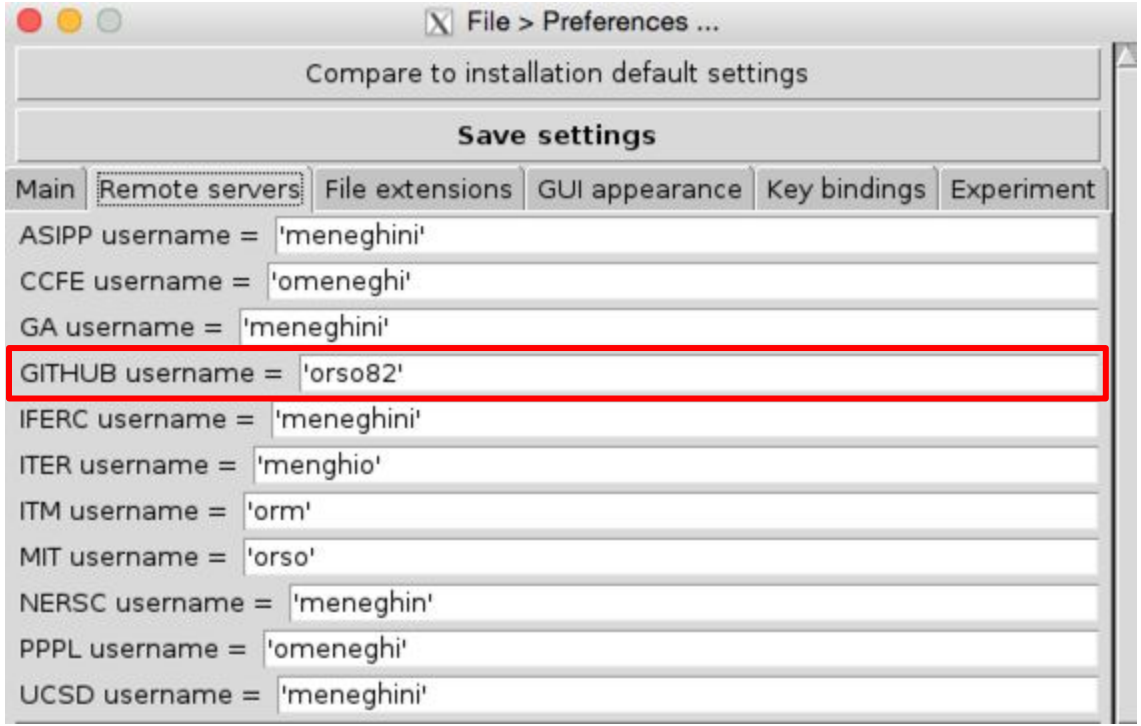
Setup your GIT environment where OMFIT is running:

```
git config --global user.name  "YOUR NAME"
git config --global user.email  YOUREMAIL@EMAIL.COM
git config --global color.ui auto
```

to make sure that your ssh keys are properly setup on the system
where OMFIT is running use: `ssh git@github.com`

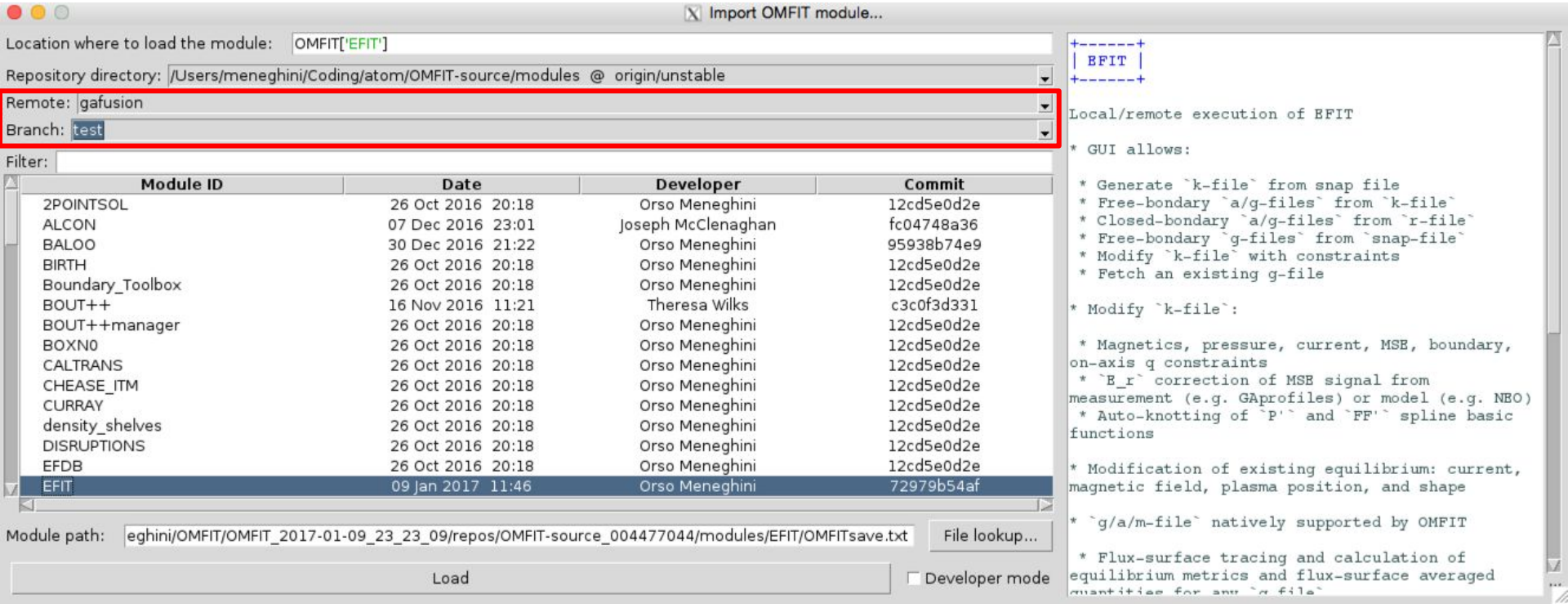
```
meneghini@F-C02PJ2F5F:~$ ssh git@github.com
PTY allocation request failed on channel 0
Hi orso82! You've successfully authenticated, but GitHub does not provide shell access.
Connection to ssh.github.com closed.
```

In OMFIT preferences, set your GITHUB username accordingly.
This will allow you **to easily access your own fork** from within OMFIT.



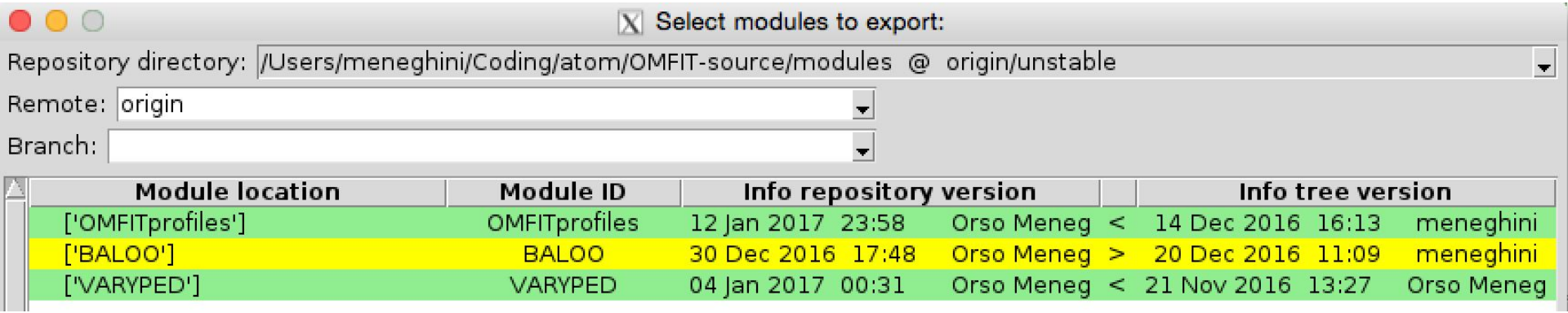
Importing modules

Modules can be imported from a remote/branch
If these are left blank then OMFIT will import modules as they are in the “Repository directory”



Exporting modules

Users can contribute to OMFIT modules' development by pushing their changes to the OMFIT-source GitHub repository directly from within OMFIT. This feature is aimed at lowering the effort for new users to contribute to the OMFIT physics modules. This is handled within git and the OMFIT GUI as follows:



where:

- **remote/branch** are the git remote and branch to which the changes will be pushed

To add a remote, just type it in the `Remote` entry. To create a new branch, just type it in the `Branch` entry.

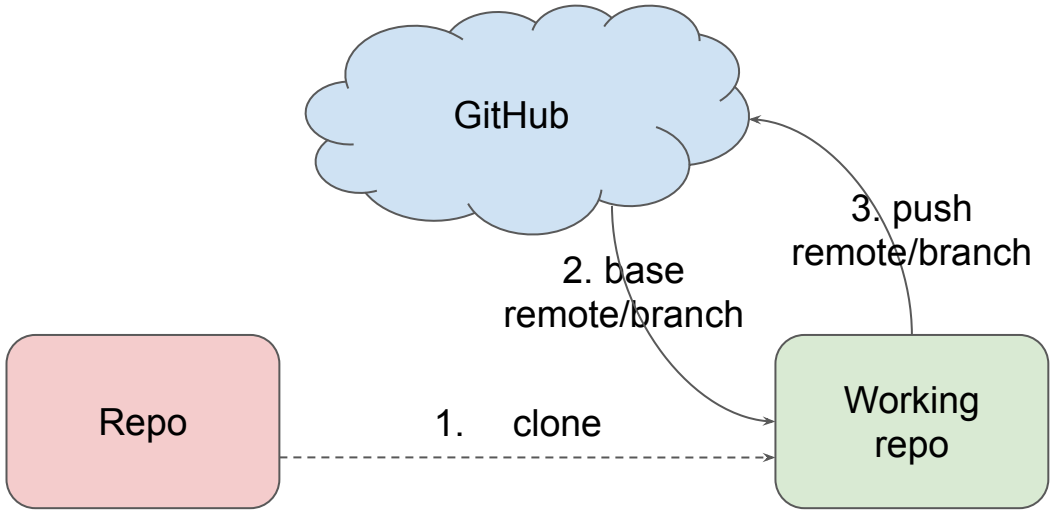
Please note that unless the remote and branch are left empty, OMFIT makes a clone of the original repository so that it can freely operate on it, without affecting the original repository (making the clone is not instantaneous). The remote named `original_git_repository` of the cloned repo points to the original git repository.

remote = ‘’
branch = ‘’

If remote and branch are blank, then git is not invoked and the module is exported in the designated modules directory.
It is up to the user to handle committing the changes and pushing the updates to GitHub

Remote and branch indicate on which remote/branch to push the changes that have been made

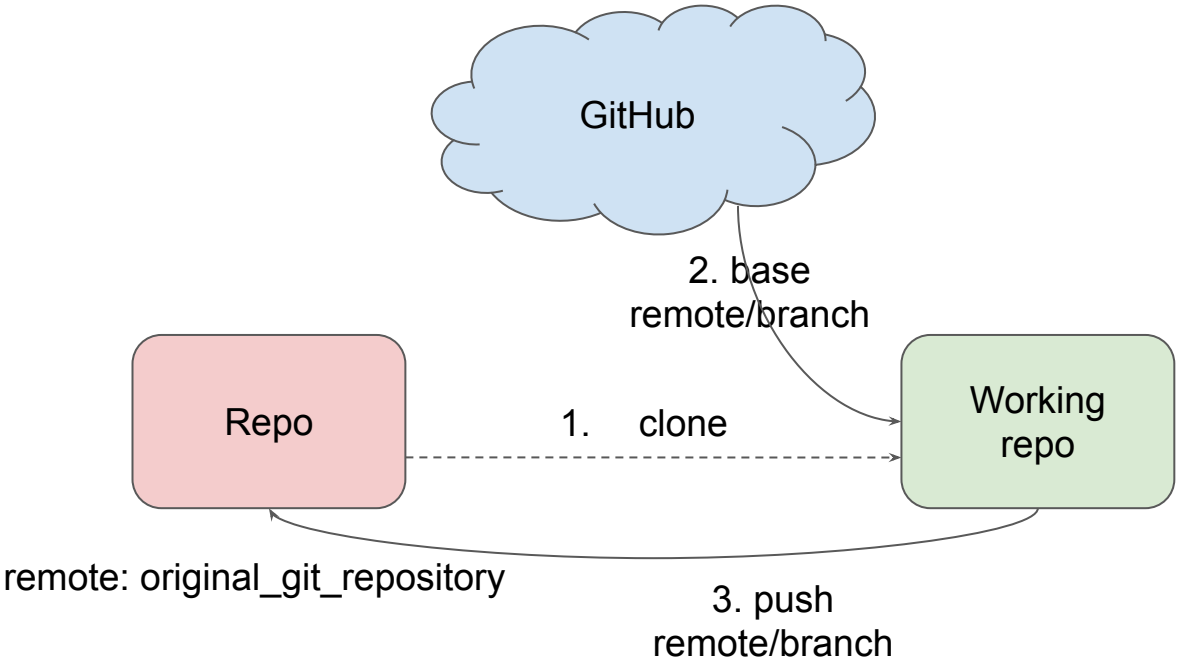
remote = ‘orso82’
branch = ‘test’



remote: original_git_repository

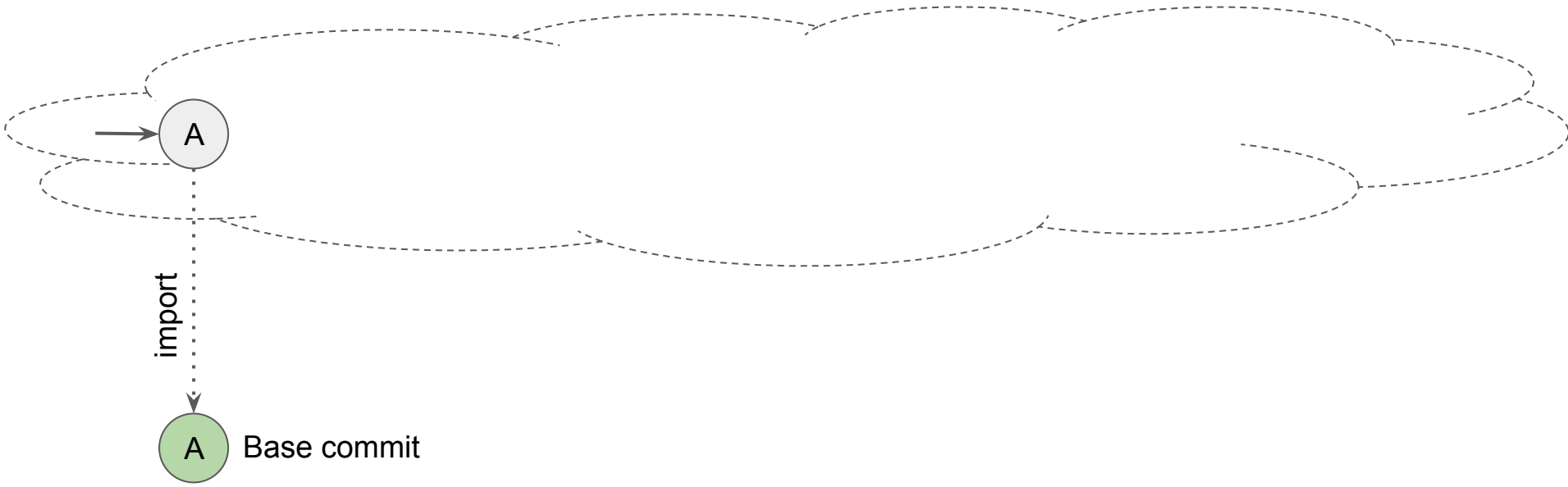
remote = ‘original_git_repository’
branch = ‘test’

To perform a commit on the local repository, use `original_git_repository` as the remote. It will be then up to the user to sync the changes on GitHub



Exporting modules

What is happening underneath

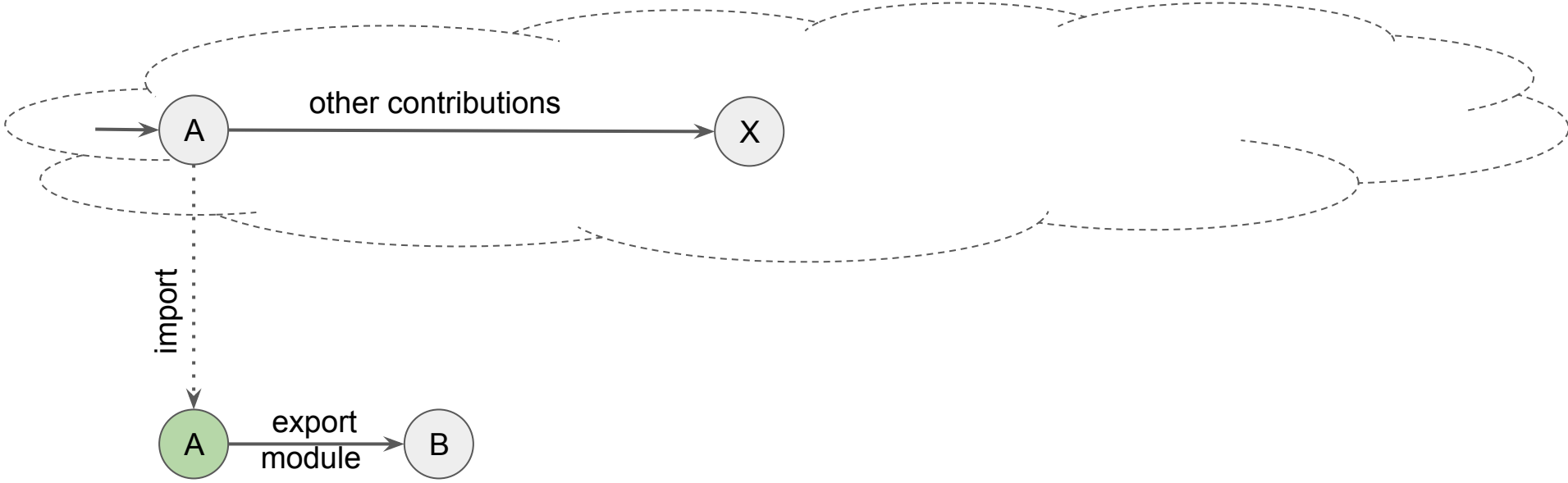


Module in the OMFIT tree

SETTINGS	FILE: SettingsNamelist.txt (823.0bytes)
SETUP	--{ 3 }--
EXPERIMENT	--{ 6 }--
REMOTE_SETUP	--{ 5 }--
DEPENDENCIES	--{ }--
MODULE	--{ 8 }--
defaultGUI	"root['GUIS']['BOUT++']"
ID	'BOUT++'
version	u'The BOUT++ module handles building of the BOUT++
contact	['meneghini@fusion.gat.com', 'izacard@pppl.gov']
edited_by	'Orso Meneghini'
date	'26 Oct 2016 20:18'
commit	'AAAAAAAAAAAAAAAAAAAAAAAAAAAAAA'
comment	''

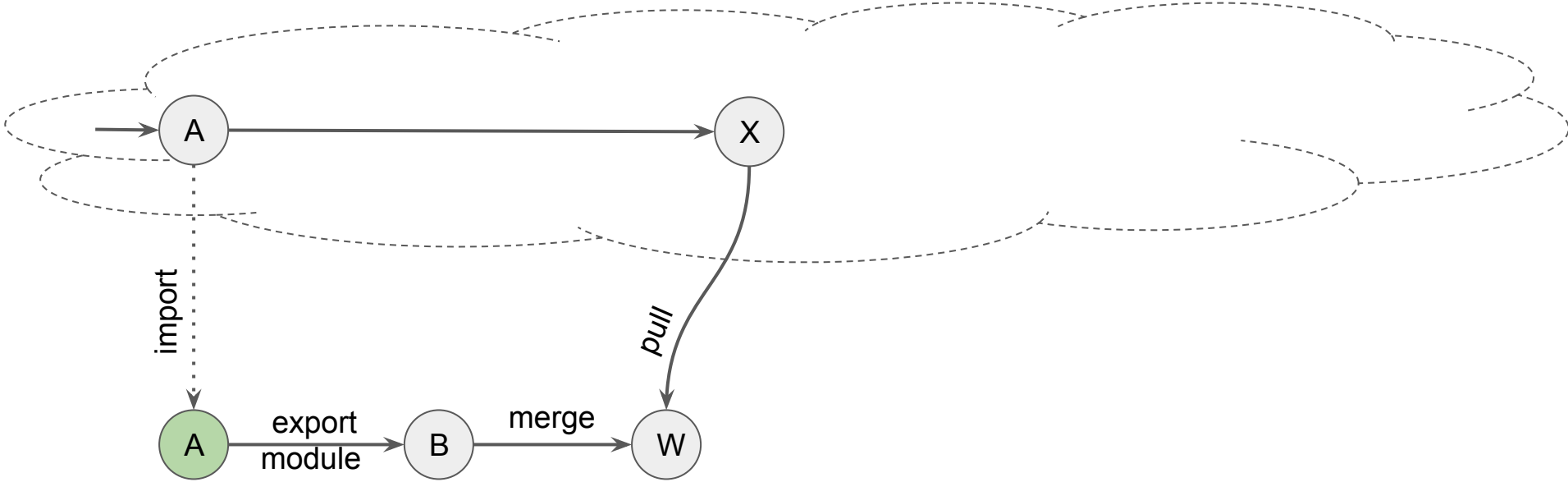
When exporting something OMFIT will make the diff with respect to the commit that is specified under
`root['SETTINGS']['MODULE']['commit']`
This is what we refer to as the base commit

`root['SETTINGS']['MODULE']['commit']`
is initialized when importing a module to the last commit of the repository where that module was modified.



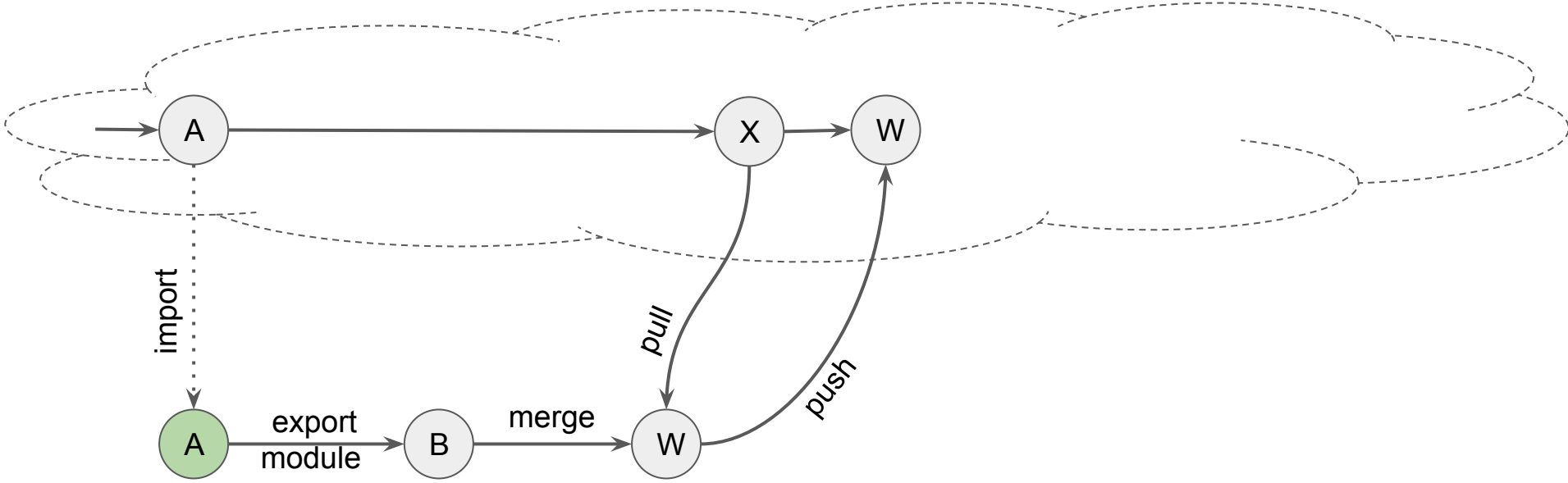
Module in the OMFIT tree

```
SETTINGS            FILE: SettingsNamelist.txt   (823.0bytes)
  SETUP             --{       3         }--
  EXPERIMENT        --{       6         }--
  REMOTE_SETUP      --{       5         }--
  DEPENDENCIES      --{                 }--
  MODULE            --{       8         }--
    defaultGUI      "root['GUIS']['BOUT++']"
    ID              'BOUT++'
    version         u'The BOUT++ module handles building of the BOUT++
    contact         ['meneghini@fusion.gat.com', 'izacard@pppl.gov']
    edited_by       'Orso Meneghini'
    date            '26 Oct 2016  20:18'
    commit          'AAAAAAAAAAAAAAAAAAAAAAAAAAAAAA'
    comment         ''
```



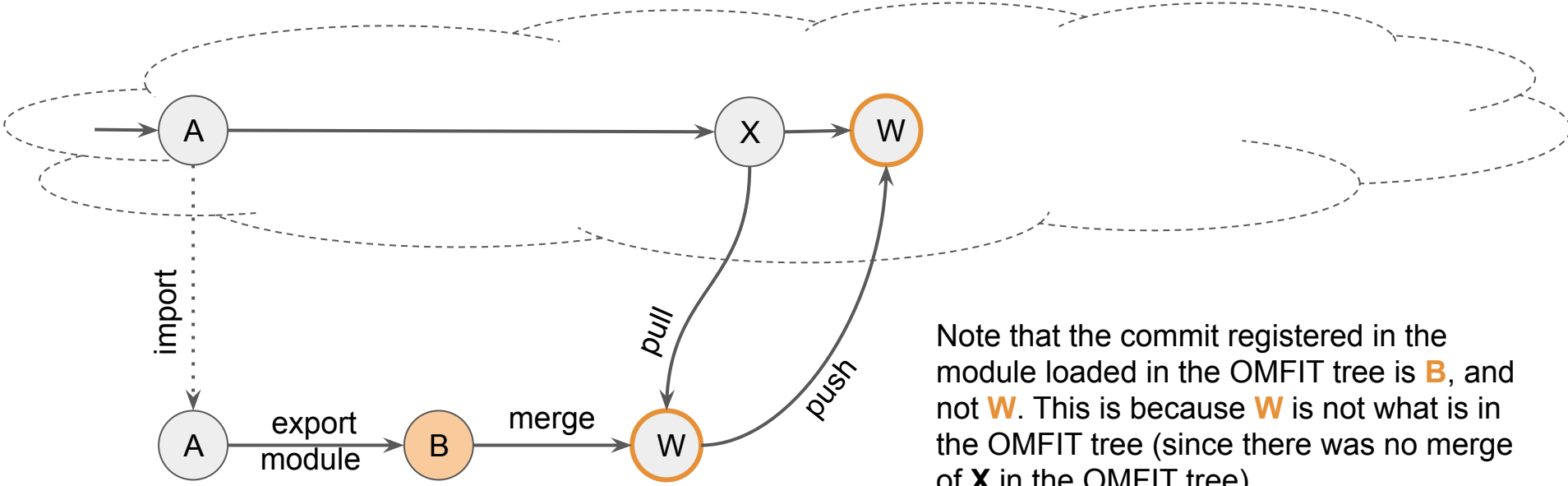
Module in the OMFIT tree

```
SETTINGS            FILE: SettingsNamelist.txt   (823.0bytes)
  SETUP             --{       3         }--
  EXPERIMENT        --{       6         }--
  REMOTE_SETUP      --{       5         }--
  DEPENDENCIES      --{                 }--
  MODULE            --{       8         }--
    defaultGUI      "root['GUIS']['BOUT++']"
    ID              'BOUT++'
    version         u'The BOUT++ module handles building of the BOUT++
    contact         ['meneghini@fusion.gat.com', 'izacard@pppl.gov']
    edited_by       'Orso Meneghini'
    date            '26 Oct 2016  20:18'
    commit          'AAAAAAAAAAAAAAAAAAAAAAAAAAAAAA'
    comment         ''
```



Module in the OMFIT tree

```
SETTINGS            FILE: SettingsNamelist.txt   (823.0bytes)
  SETUP             --{       3         }--
  EXPERIMENT        --{       6         }--
  REMOTE_SETUP      --{       5         }--
  DEPENDENCIES      --{                 }--
  MODULE            --{       8         }--
    defaultGUI      "root['GUIS']['BOUT++']"
    ID              'BOUT++'
    version         u'The BOUT++ module handles building of the BOUT++
    contact         ['meneghini@fusion.gat.com', 'izacard@pppl.gov']
    edited_by       'Orso Meneghini'
    date            '26 Oct 2016  20:18'
    commit          'AAAAAAAAAAAAAAAAAAAAAAAAAAAAAA'
    comment         ''
```



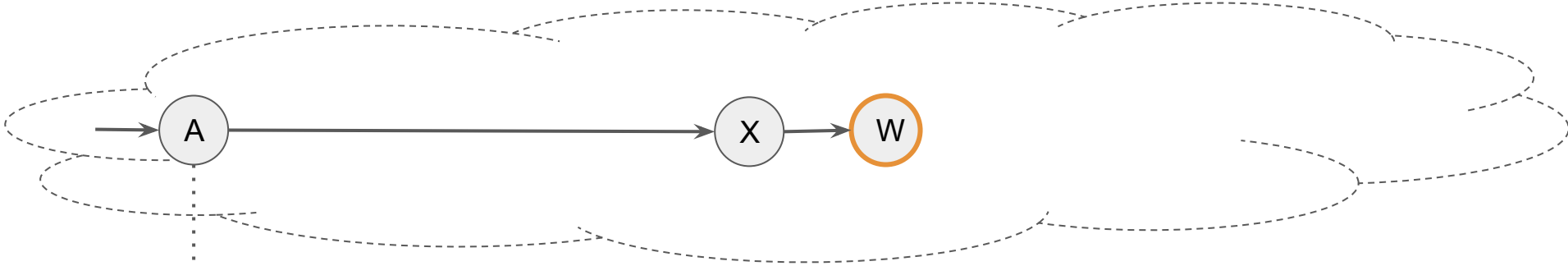
Module in the OMFIT tree

SETTINGS	FILE: SettingsNamelist.txt	(823.0bytes)
SETUP	--{ 3 }--	
EXPERIMENT	--{ 6 }--	
REMOTE_SETUP	--{ 5 }--	
DEPENDENCIES	--{ }--	
MODULE	--{ 8 }--	
defaultGUI	"root['GUIS']['BOUT++']"	
ID	'BOUT++'	
version	u'The BOUT++ module handles building of the BOUT++	
contact	['meneghini@fusion.gat.com', 'izacard@pppl.gov']	
edited_by	'Orso Meneghini'	
date	'26 Oct 2016 20:18'	
commit	'BBBBBBBBBBBBBBBBBBBBBBBBBBBBBB'	
comment	''	

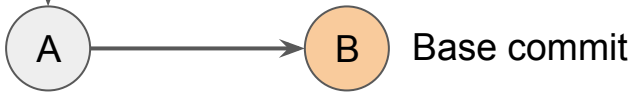
Note that the commit registered in the module loaded in the OMFIT tree is **B**, and not **W**. This is because **W** is not what is in the OMFIT tree (since there was no merge of **X** in the OMFIT tree).

However, since **W** includes the content of **B**, including handling of merge conflicts, we will not be asked to re-handle the same conflicts for the next export of the module.

After exporting, the base commit stored in `root['SETTINGS']['MODULE']['commit']` is updated to point to the commit **B**, after the export, and before the merge.



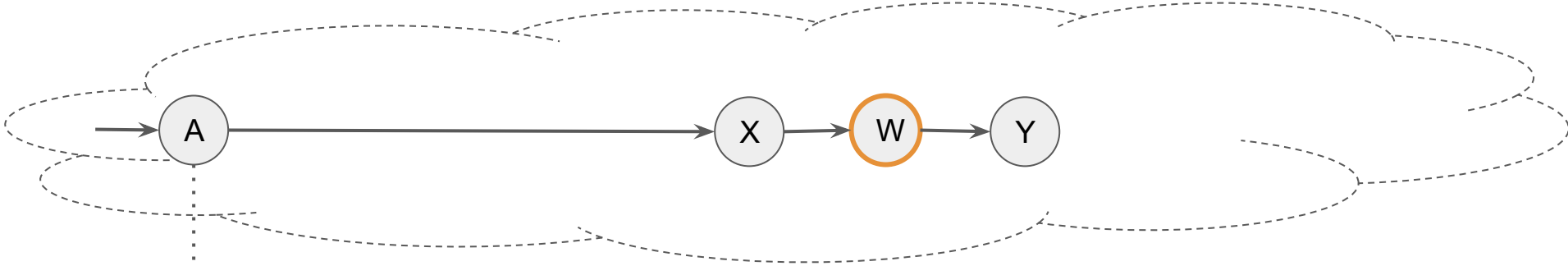
import



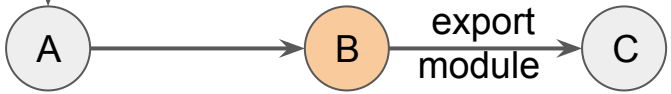
Base commit

Module in the OMFIT tree

```
SETTINGS            FILE: SettingsNamelist.txt   (823.0bytes)
  SETUP             --{       3         }--
  EXPERIMENT        --{       6         }--
  REMOTE_SETUP      --{       5         }--
  DEPENDENCIES      --{                 }--
  MODULE            --{       8         }--
    defaultGUI      "root['GUIS']['BOUT++']"
    ID              'BOUT++'
    version         u'The BOUT++ module handles building of the BOUT++
    contact         ['meneghini@fusion.gat.com', 'izacard@pppl.gov']
    edited_by       'Orso Meneghini'
    date            '26 Oct 2016  20:18'
    commit          'BBBBBBBBBBBBBBBBBBBBBBBBBBBBBB'
    comment         ''
```

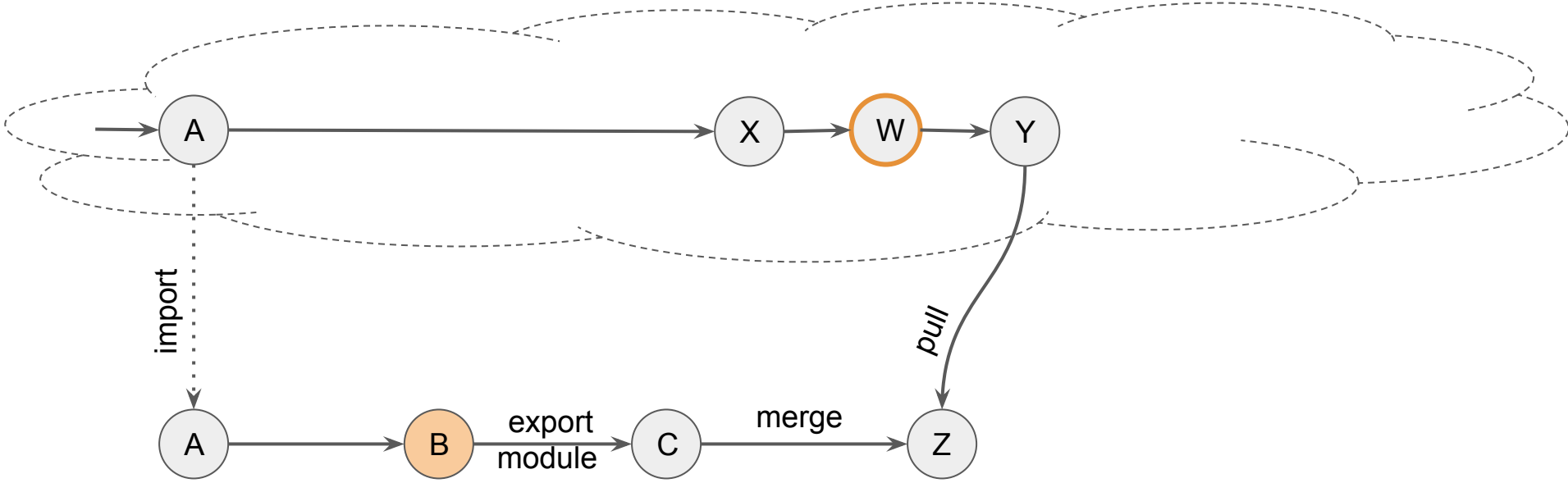


import



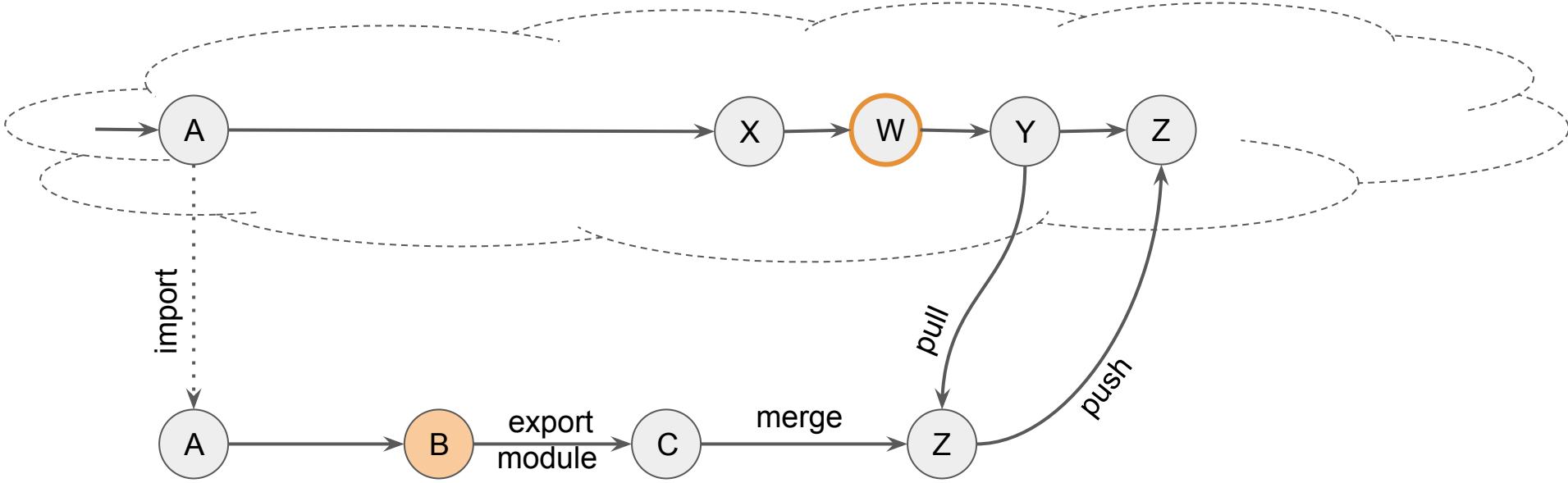
Module in the OMFIT tree

```
SETTINGS            FILE: SettingsNamelist.txt   (823.0bytes)
  SETUP             --{       3         }--
  EXPERIMENT        --{       6         }--
  REMOTE_SETUP      --{       5         }--
  DEPENDENCIES      --{                 }--
  MODULE            --{       8         }--
    defaultGUI      "root['GUIS']['BOUT++']"
    ID              'BOUT++'
    version         u'The BOUT++ module handles building of the BOUT++
    contact         ['meneghini@fusion.gat.com', 'izacard@pppl.gov']
    edited_by       'Orso Meneghini'
    date            '26 Oct 2016  20:18'
    commit          'BBBBBBBBBBBBBBBBBBBBBBBBBBBBBB'
    comment         ''
```



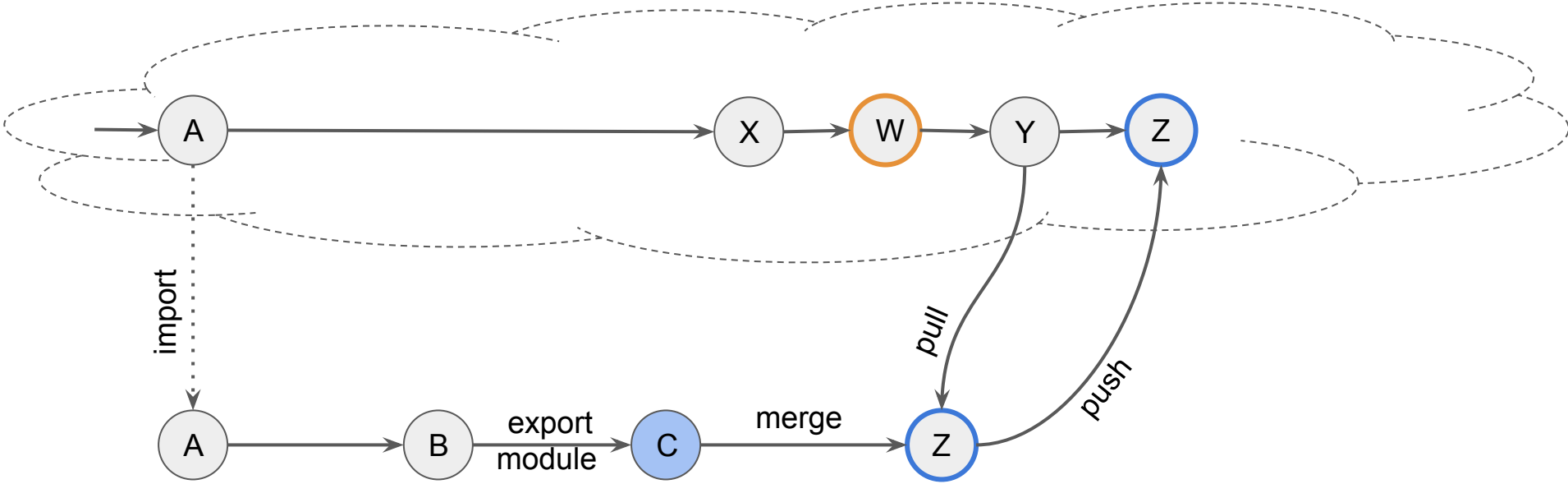
Module in the OMFIT tree

```
SETTINGS            FILE: SettingsNamelist.txt   (823.0bytes)
  SETUP             --{       3         }--
  EXPERIMENT        --{       6         }--
  REMOTE_SETUP      --{       5         }--
  DEPENDENCIES      --{                 }--
  MODULE            --{       8         }--
    defaultGUI      "root['GUIS']['BOUT++']"
    ID              'BOUT++'
    version         u'The BOUT++ module handles building of the BOUT++
    contact         ['meneghini@fusion.gat.com', 'izacard@pppl.gov']
    edited_by       'Orso Meneghini'
    date            '26 Oct 2016  20:18'
    commit          'BBBBBBBBBBBBBBBBBBBBBBBBBBBBBB'
    comment         ''
```



Module in the OMFIT tree

```
SETTINGS          FILE: SettingsNamelist.txt   (823.0bytes)
  SETUP           --{       3         }--
  EXPERIMENT      --{       6         }--
  REMOTE_SETUP    --{       5         }--
  DEPENDENCIES    --{                 }--
  MODULE          --{       8         }--
    defaultGUI    "root['GUIS']['BOUT++']"
    ID            'BOUT++'
    version       u'The BOUT++ module handles building of the BOUT++
    contact       ['meneghini@fusion.gat.com', 'izacard@pppl.gov']
    edited_by     'Orso Meneghini'
    date          '26 Oct 2016  20:18'
    commit        'BBBBBBBBBBBBBBBBBBBBBBBBBBBBBB'
    comment       ''
```



Module in the OMFIT tree

SETTINGS	FILE: SettingsNamelist.txt	(823.0bytes)
SETUP	--{ 3 }--	
EXPERIMENT	--{ 6 }--	
REMOTE_SETUP	--{ 5 }--	
DEPENDENCIES	--{ }--	
MODULE	--{ 8 }--	
defaultGUI	"root['GUIS']['BOUT++']"	
ID	'BOUT++'	
version	u'The BOUT++ module handles building of the BOUT++	
contact	['meneghini@fusion.gat.com', 'izacard@pppl.gov']	
edited_by	'Orso Meneghini'	
date	'26 Oct 2016 20:18'	
commit	'CCCCCCCCCCCCCCCCCCCCCCCCCCCCCC'	
comment	''	

Again, commit **Z** includes content of **C** including handling of merge conflicts.

The base commit stored in `root['SETTINGS']['MODULE']['commit']` is updated to point to the commit **C**, after the export, and before the merge.