

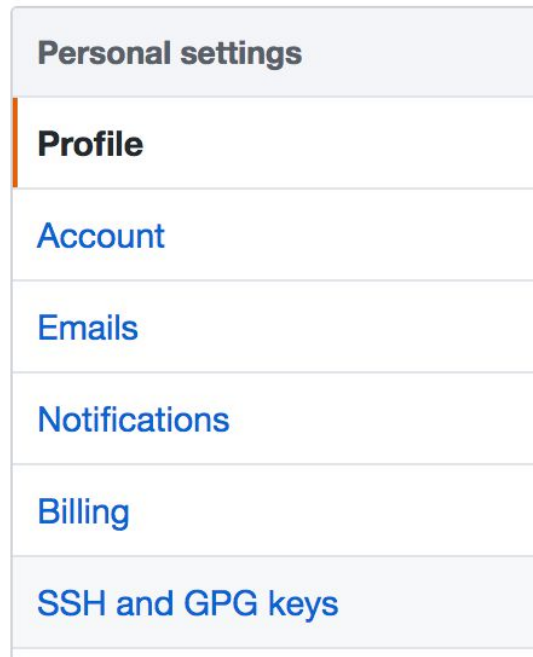
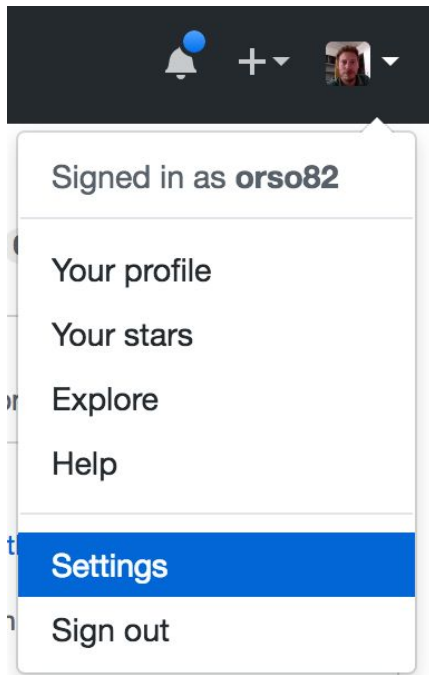
OMFIT + git/GitHub

OMFIT



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
```

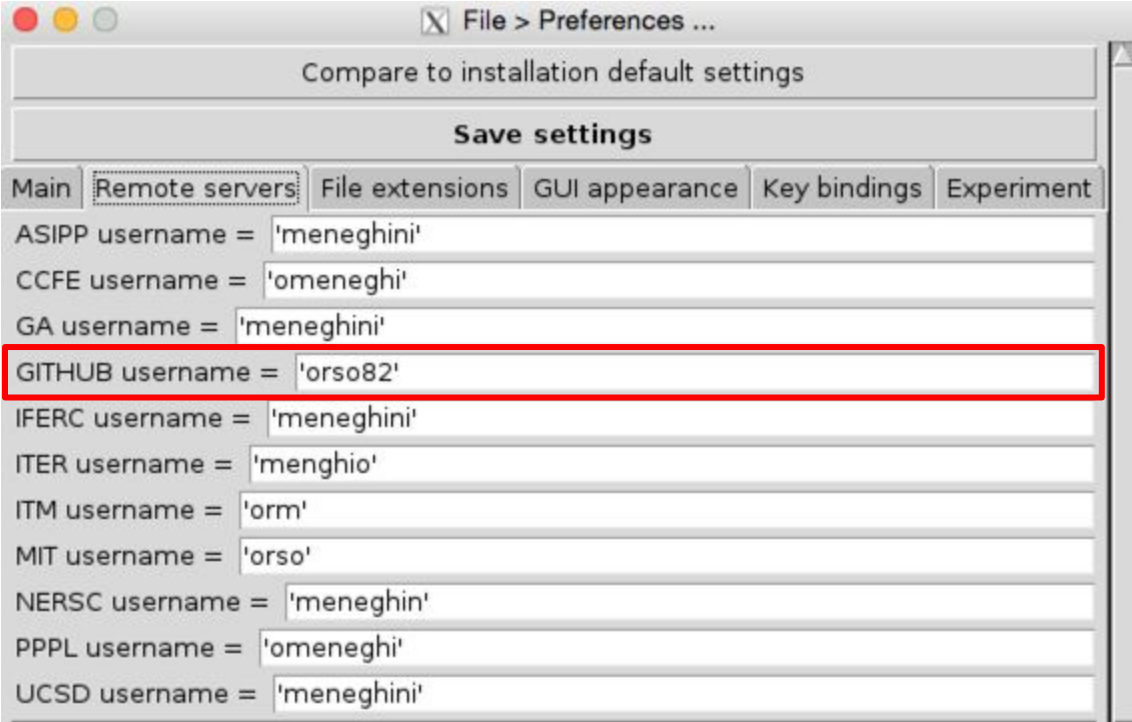
to make sure that your ssh keys are properly setup on the system
where OMFIT is running use: `ssh git@github.com`

```
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”

Import OMFIT module...

Location where to load the module: OMFIT[EFIT]

Repository directory: /Users/meneghini/Coding/atom/OMFIT-source/modules @ origin/unstable

Remote: gafusion

Branch: test

Filter:

Module ID	Date	Developer	Commit
2POINTSOL	26 Oct 2016 20:18	Orso Meneghini	12cd5e0d2e
ALCON	07 Dec 2016 23:01	Joseph McClenaghan	fc04748a36
BALOO	30 Dec 2016 21:22	Orso Meneghini	95938b74e9
BIRTH	26 Oct 2016 20:18	Orso Meneghini	12cd5e0d2e
Boundary_Toolbox	26 Oct 2016 20:18	Orso Meneghini	12cd5e0d2e
BOUT++	16 Nov 2016 11:21	Theresa Wilks	c3c0f3d331
BOUT++manager	26 Oct 2016 20:18	Orso Meneghini	12cd5e0d2e
BOXNO	26 Oct 2016 20:18	Orso Meneghini	12cd5e0d2e
CALTRANS	26 Oct 2016 20:18	Orso Meneghini	12cd5e0d2e
CHEASE_ITM	26 Oct 2016 20:18	Orso Meneghini	12cd5e0d2e
CURRAY	26 Oct 2016 20:18	Orso Meneghini	12cd5e0d2e
density_shelves	26 Oct 2016 20:18	Orso Meneghini	12cd5e0d2e
DISRUPTIONS	26 Oct 2016 20:18	Orso Meneghini	12cd5e0d2e
EFDB	26 Oct 2016 20:18	Orso Meneghini	12cd5e0d2e
EFIT	09 Jan 2017 11:46	Orso Meneghini	72979b54af

Module path: eghini/OMFIT/OMFIT_2017-01-09_23_23_09/repos/OMFIT-source_004477044/modules/EFIT/OMFITsave.txt

File lookup...

Load

☐ Developer mode

EFIT

Local/remote execution of EFIT

* GUI allows:

- * Generate `k-file` from snap file
- * Free-boundary `a/g-files` from `k-file`
- * Closed-boundary `a/g-files` from `r-file`
- * Free-boundary `g-files` from `snap-file`
- * Modify `k-file` with constraints
- * Fetch an existing g-file

* Modify `k-file`:

- * Magnetics, pressure, current, MSE, boundary, on-axis q constraints
- * `B\_r` correction of MSE signal from measurement (e.g. GAprfiles) or model (e.g. NEO)
- * Auto-knotting of `P` and `FF` spline basic functions

* Modification of existing equilibrium: current, magnetic field, plasma position, and shape

* `g/a/m-file` natively supported by OMFIT

* Flux-surface tracing and calculation of equilibrium metrics and flux-surface averaged quantities for any `g file`

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:

Select modules to export:

Repository directory: /Users/meneghini/Coding/atom/OMFIT-source/modules @ origin/unstable

Remote: origin

Branch:

Module location	Module ID	Info repository version		Info tree version	
['OMFITprofiles']	OMFITprofiles	12 Jan 2017 23:58	Orso Meneg <	14 Dec 2016 16:13	meneghini
['BALOO']	BALOO	30 Dec 2016 17:48	Orso Meneg >	20 Dec 2016 11:09	meneghini
['VARYPED']	VARYPED	04 Jan 2017 00:31	Orso Meneg <	21 Nov 2016 13:27	Orso Meneg

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 = "

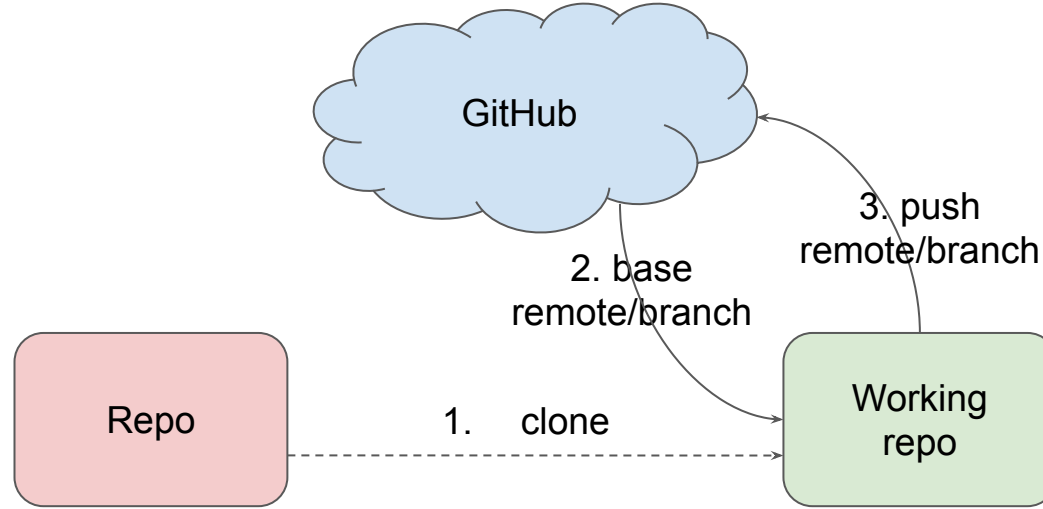
If remote and branch are blank, then git is not invoked and the module is exported in the designated modules directory. It is up to the user to handle committing the changes and pushing the updates to GitHub



Repo

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

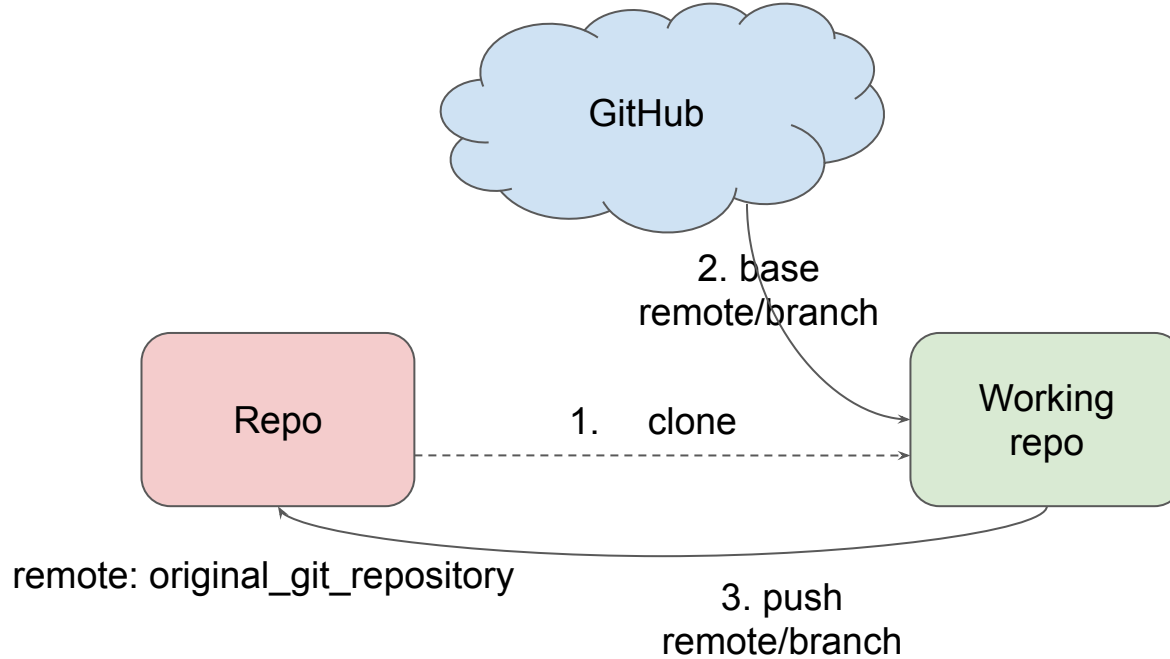
```
remote = 'orso82'  
branch = 'test'
```



remote: original_git_repository

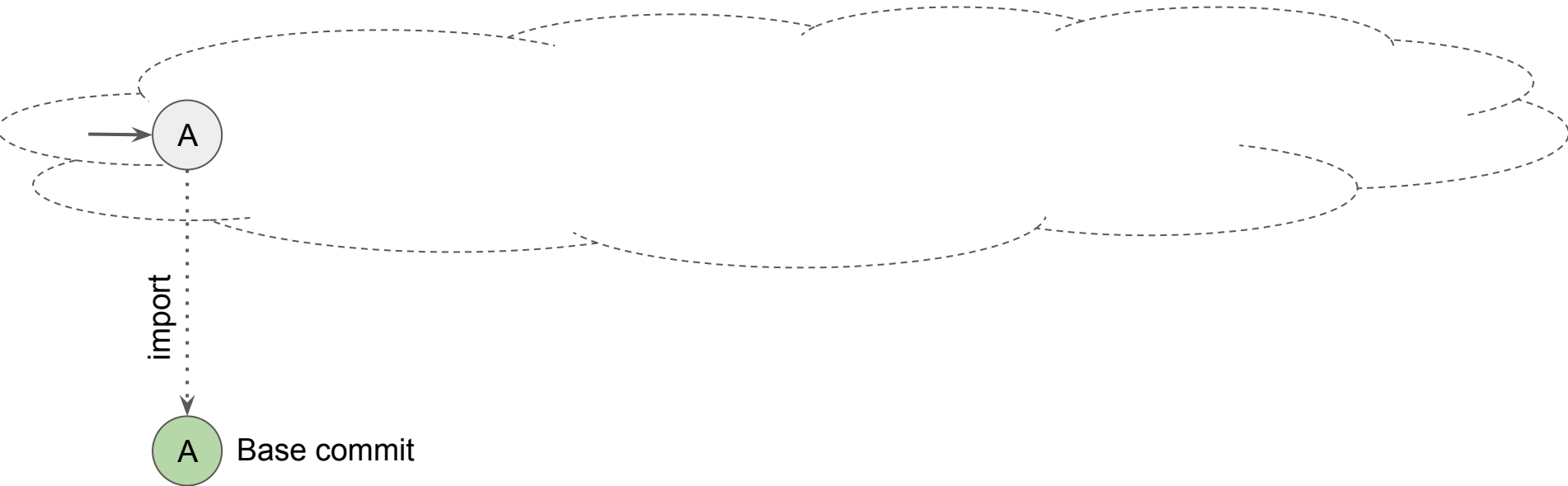
```
remote = 'original_git_repository'  
branch = 'test'
```

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

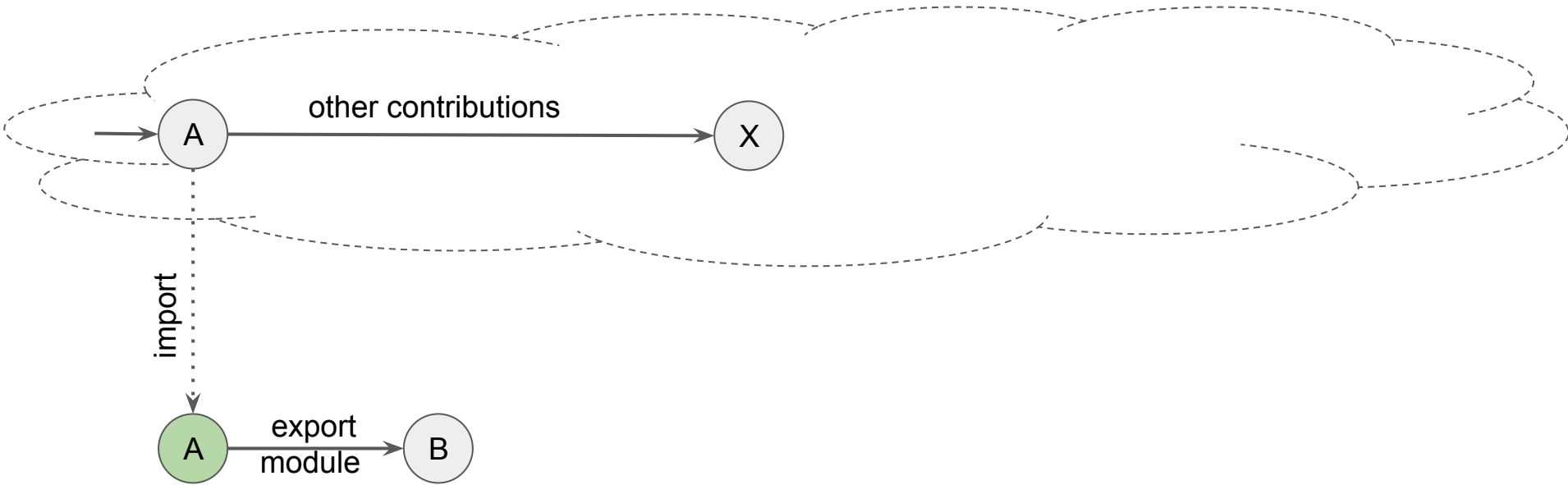
What is happening underneath



▼ 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	'AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA'
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.

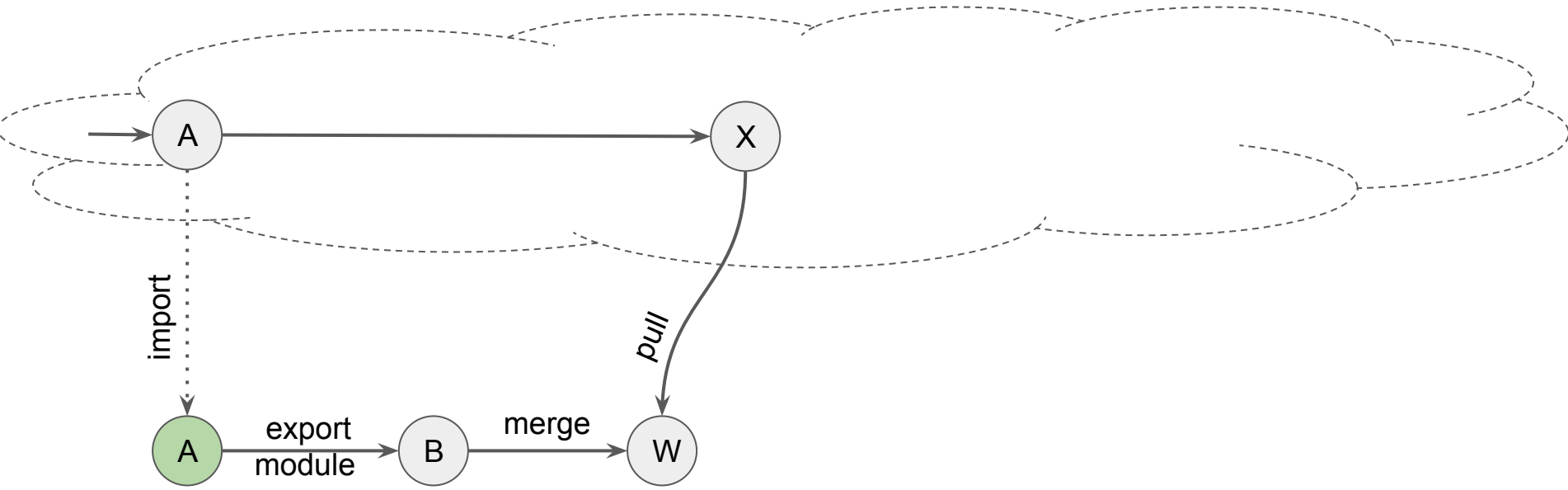


```

▼ SETTINGS
  ▸ SETUP
  ▸ EXPERIMENT
  ▸ REMOTE_SETUP
  DEPENDENCIES
  ▼ MODULE
    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 'AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA'
    comment ""
  
```

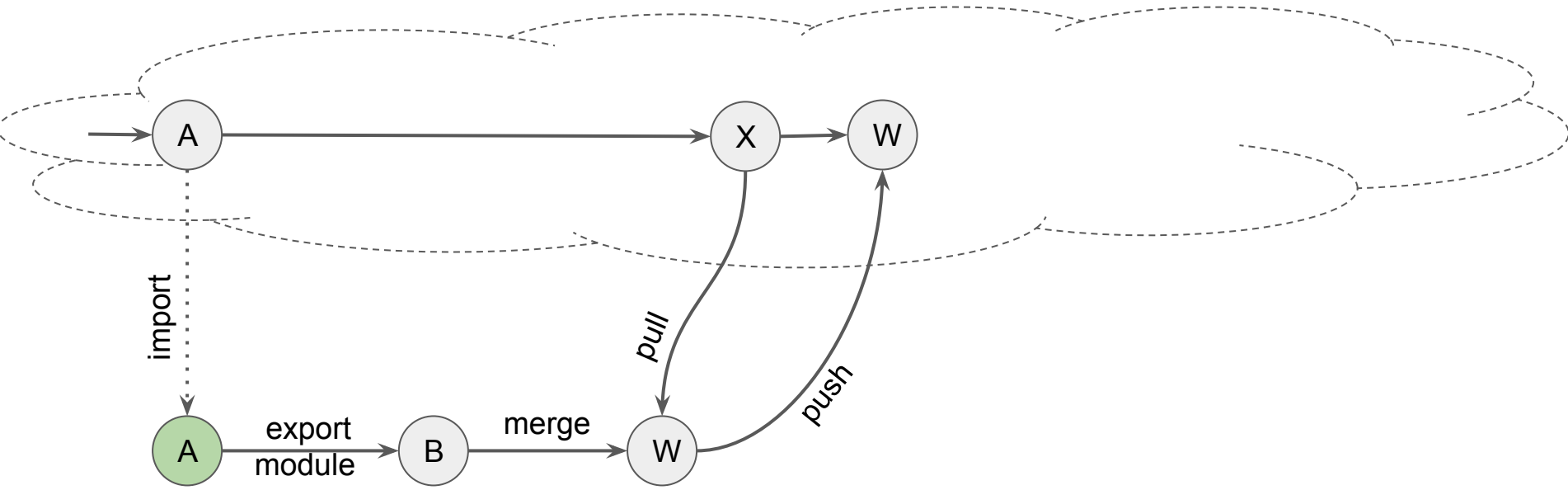
FILE: SettingsNamelist.txt (823.0bytes)

Module in the OMFIT tree



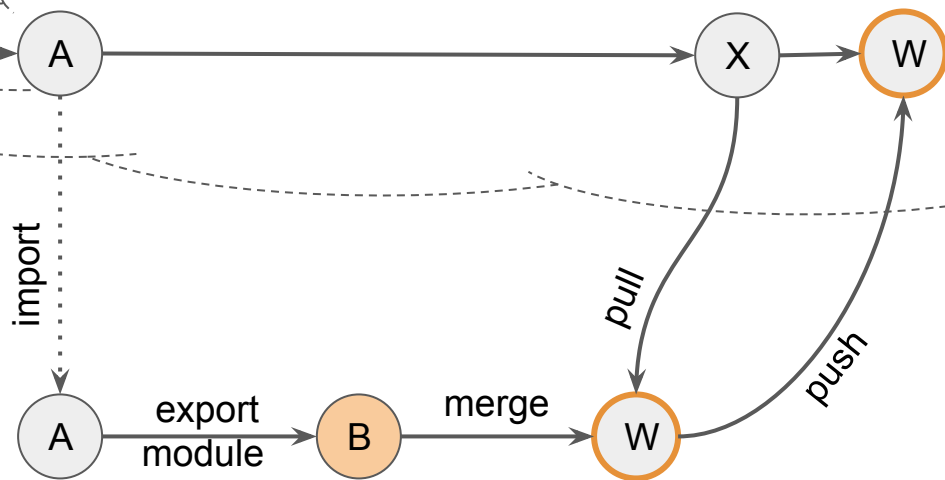
▼ SETTINGS	FILE: SettingsNamelist.txt (823.0bytes)
▶ SETUP	--{ 3 }--
▶ EXPERIMENT	--{ 6 }--
▶ REMOTE_SETUP	--{ 5 }--
DEPENDENCIES	--{ }--
▼ MODULE	--{ 8 }--
defaultGUI	"root['GUIS']['BOUT++']"
ID	'BOUT++'
version	u'The BOUT++ module handles building of the BOUT++
contact	['meneghini@fusion.gat.com',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

Module in the OMFIT tree



```
▼ SETTINGS
  ▸ SETUP
  ▸ EXPERIMENT
  ▸ REMOTE_SETUP
  DEPENDENCIES
  ▼ MODULE
    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 'AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA'
    comment ""
```

FILE: SettingsNamelist.txt (823.0bytes)



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.

```

▼ SETTINGS
  ▶ SETUP
  ▶ EXPERIMENT
  ▶ REMOTE_SETUP
  DEPENDENCIES
  ▼ MODULE
    defaultGUI
    ID
    version
    contact
    edited_by
    date
    commit
    comment

```

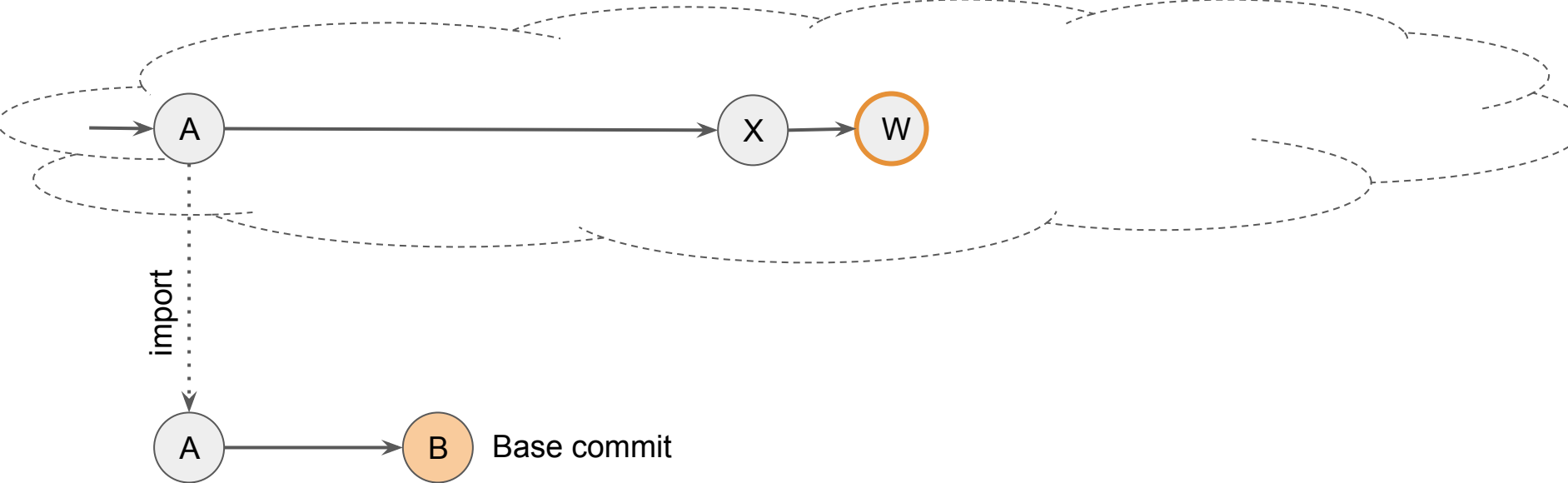
FILE: SettingsNamelist.txt (823.0bytes)

```

--{      3      }--
--{      6      }--
--{      5      }--
--{      8      }--
"root['GUIS']['BOUT++']"
'BOUT++'
u'The BOUT++ module handles building of the BOUT++
['meneghini@fusion.gat.com', 'izacard@pppl.gov']
'Orso Meneghini'
'26 Oct 2016 20:18'
'BBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBB'
"

```

Module in the OMFIT tree



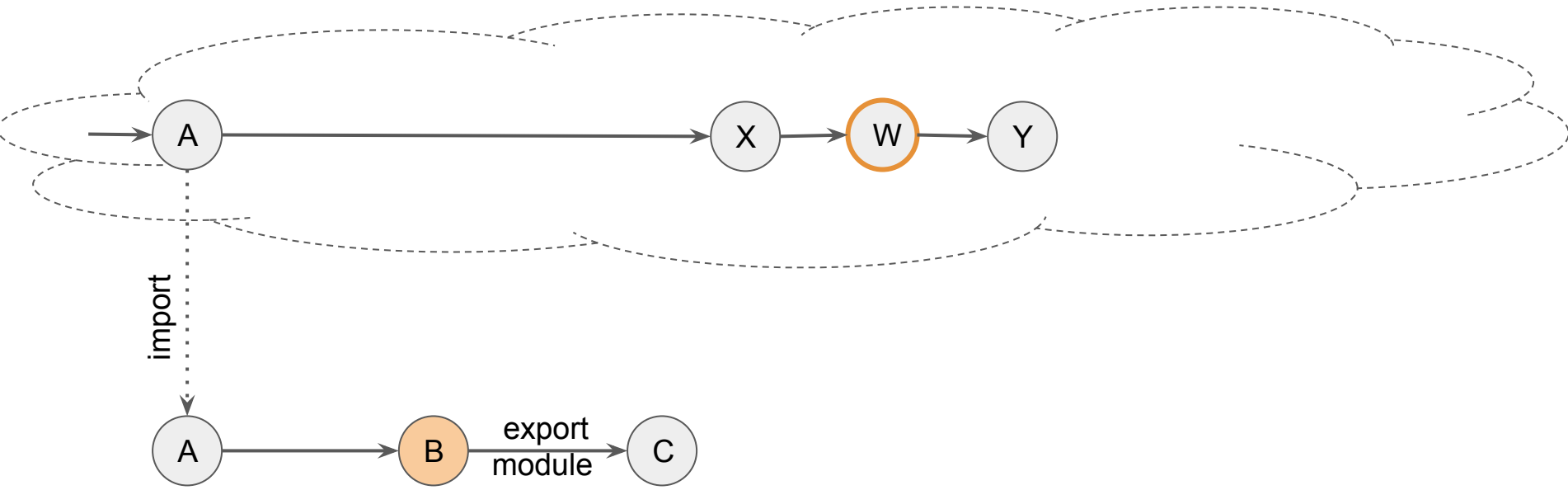
```

▼ SETTINGS
  ▸ SETUP
  ▸ EXPERIMENT
  ▸ REMOTE_SETUP
  DEPENDENCIES
▼ MODULE
  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 'BBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBB'
  comment ""

```

FILE: SettingsNamelist.txt (823.0bytes)

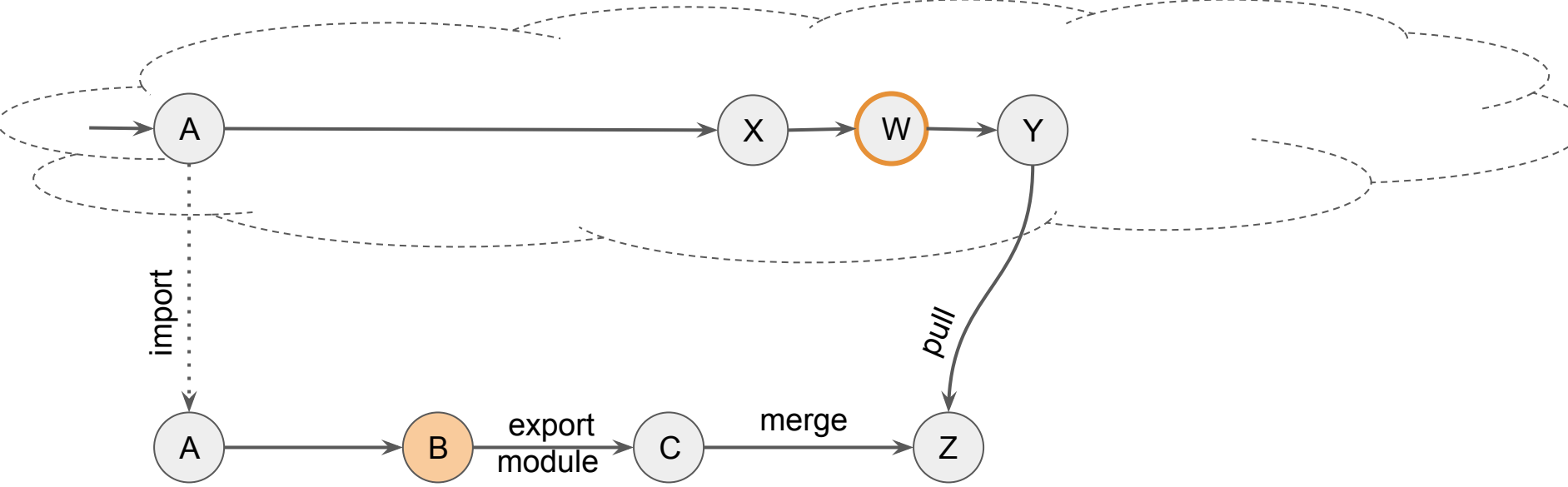
Module in the OMFIT tree



```
▼ SETTINGS
  ▸ SETUP
  ▸ EXPERIMENT
  ▸ REMOTE_SETUP
  DEPENDENCIES
  ▼ MODULE
    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 'BBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBB'
    comment ""
```

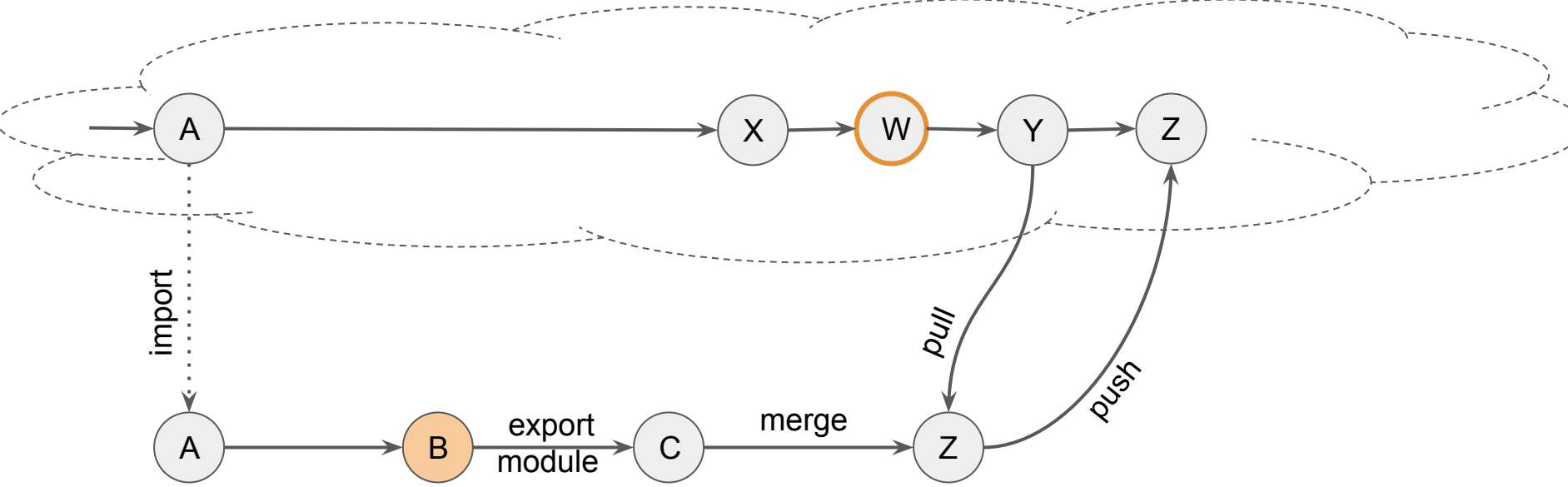
FILE: SettingsNamelist.txt (823.0bytes)

Module in the OMFIT tree

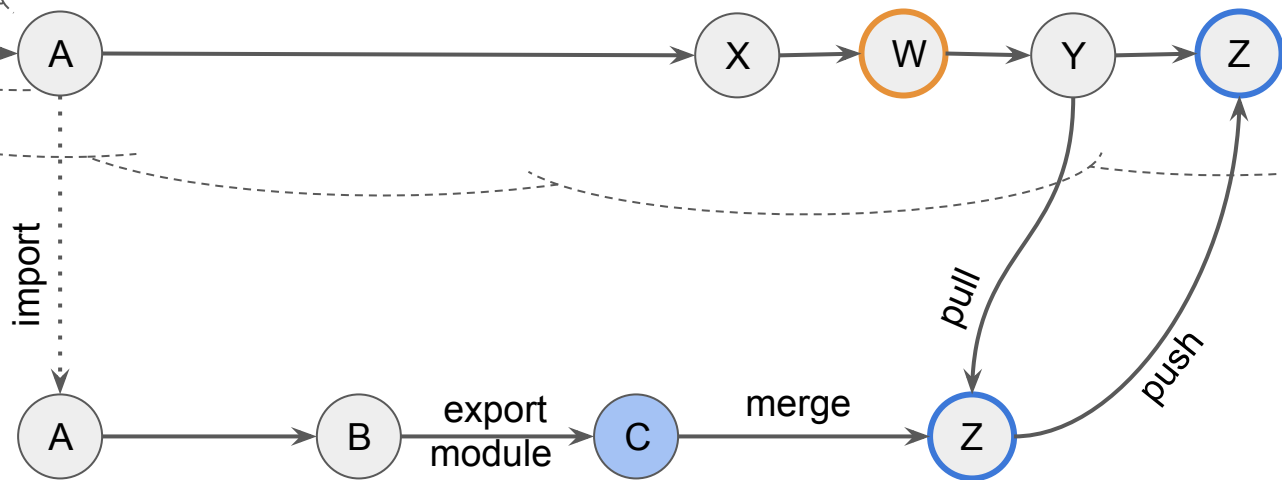


▼ SETTINGS	FILE: SettingsNamelist.txt (823.0bytes)
▶ SETUP	--{ 3 }--
▶ EXPERIMENT	--{ 6 }--
▶ REMOTE_SETUP	--{ 5 }--
DEPENDENCIES	--{ }--
▼ MODULE	--{ 8 }--
defaultGUI	"root['GUIS']['BOUT++']"
ID	'BOUT++'
version	u'The BOUT++ module handles building of the BOUT++
contact	['meneghini@fusion.gat.com',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



▼ SETTINGS

▸ SETUP

▸ EXPERIMENT

▸ REMOTE_SETUP

DEPENDENCIES

▼ MODULE

defaultGUI

ID

version

contact

edited_by

date

commit

comment

FILE: SettingsNamelist.txt (823.0bytes)

```

--{      3      }--
--{      6      }--
--{      5      }--
--{      5      }--
--{      8      }--
"root['GUIS']['BOUT++']"
'BOUT++'
u'The BOUT++ module handles building of the BOUT++
['meneghini@fusion.gat.com', 'izacard@pppl.gov']
'Orso Meneghini'
'26 Oct 2016 20:18'
'CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC'
"
```

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.