Autosubmit 3.14.0 and v4.0.0 quick look

The Autosubmit Team

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3.14.0 - News

3.14.0 - Internal changes - Summary

Security increased as now is being restrictive for writing when the user is not the owner of the experiment. This version also features redesigned allowed/denied hosts for specific commands.

Redesigned the historical database that allows for more detailed experiment stats and improvements to its recovery

Improved connectivity, as now Autosubmit will inform about remote/slurm issues, and the emails will have the correct timestamp and allows to connect to multiple hosts.

Improved command logs and Autosubmit recovery.

Memory optimizations and improved the Autosubmit performance.

Improved migrate command.

3.14.0 - Security - Improvements

Non-Owner users are only able to:

expid, monitor, describe, report , stats

Whitelist & blacklist host and ips has been changed into Authorized,forbidden.

New permissions:

```
drwxr-xr-x   2 dbeltran Earth 4096 Jan 24
12:58 conf/
drwxr-xr-x   2 dbeltran Earth 4096 Jan 24
12:55 pkl/
drwxrwxr-x   2 dbeltran Earth 4096 Jan 24
12:58 plot/
drwxrwxr-x   2 dbeltran Earth 4096 Jan 24
12:58 status/
drwxrwxr-x   4 dbeltran Earth 4096 Jan 24
12:58 tmp/
drwxr-xr-x   4 dbeltran Earth 4096 Jan 24
12:58 proj/
```

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3.14.0 - Databases - Improvements

Autosubmit 3.13.0

Whenever the user had an "corrupted

database or pkl"
Solutions were:

`autosubmit pklfix <expid>`

`autosubmit dbfix <expid>`

Autosubmit 3.14.0

pkl -> restored automatically.

dbfix -> restored automatically -> backups in form of

sql instructions.

3.14.0 - Connectivity - Improvements

Multiple hosts can be added now

```
[marenostrum4]
HOST=mn1.bsc,mn2.bsc.es,mn3.bsc.es
```

```
autosubmit recovery a00f –all -s
```

Will automatically cancel remote active jobs.

```
Autosubmit notification: Remote Platform issues

----------------------------------------------------------
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Experiment id:  a000


Platform affected: marenostrum0 using as host:mn0.bsc.es


[WARN] Autosubmit encountered an issue with an
remote_platform.
 It will resume itself, whenever is possible
 If issue persist, you can change the host IP or put
multiple hosts in the platform.conf


INFO: This message was auto generated by Autosubmit,
remember that you can disable these messages on
Autosubmit config file.
```

3.14.0 - Management changes - Summary

Workflows have now increased flexibility: New parameters for the finer definition of workflow dependencies or selecting specific tasks.

Workflow behavior configuration includes new and improved old parameters that allow controlling more aspects of the workflow for all platforms in a more homogeneous form.

Improvements to wrappers as they no longer restricted to one for an experiment and added a new internal retrial mechanism for vertical wrappers.

Project data/code management is improved to take advantage of advanced git features, extend the submodule support, and enhance the data transfer for local repositories.

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3.14.0 - Flexibility - Generation

```
[SIM]

FILE = SIM.sh

DEPENDENCIES = SIM-1

RUNNING = chunk

EXCLUDED_CHUNKS = 1

[POST]

FILE = POST.sh

DEPENDENCIES = SIM

RUNNING = member

INCLUDED_MEMBERS = 0

[CLEAN]

FILE = CLEAN.sh

DEPENDENCIES = POST SIM

RUNNING = chunk

EXCLUDED_MEMBERS = 1

EXCLUDED_CHUNKS = 1
```

```
[CLEAN_MEMBER_1]

FILE = CLEAN_SPECIAL.sh

DEPENDENCIES = POST SIM

RUNNING= chunk

INCLUDED_CHUNKS = 2,3

INCLUDED_MEMBERS = 1
```


![Barcelona Supercomputing Center - Centro Nacional de Supercomputación](image)
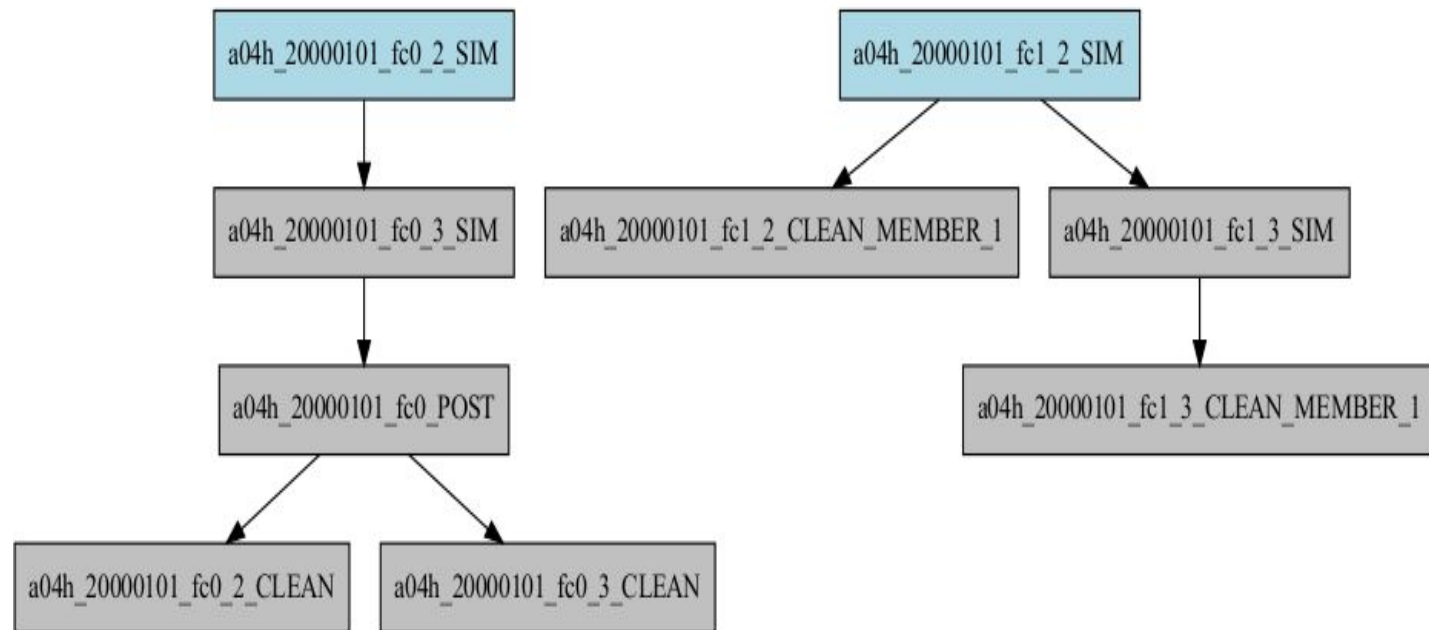
3.14.0 - Flexibility - Selection

```
[SIM]

FILE = sim.sh

DEPENDENCIES = INI SIM-1

RUNNING = chunk

[CLEAN]

FILE = clean.tmpl.sh

DEPENDENCIES = CLEAN SIM SIM+1

SELECT_CHUNKS = CLEAN*[1]*[2:]

RUNNING = chunk

[ESM]

FILE = esmvaltool.tmpl.py

DEPENDENCIES = CLEAN

RUNNING = chunk

[MONITOR]

FILE = monitor.tmpl.py

DEPENDENCIES = MONITOR-4 CLEAN ESM

RUNNING = chunk
```
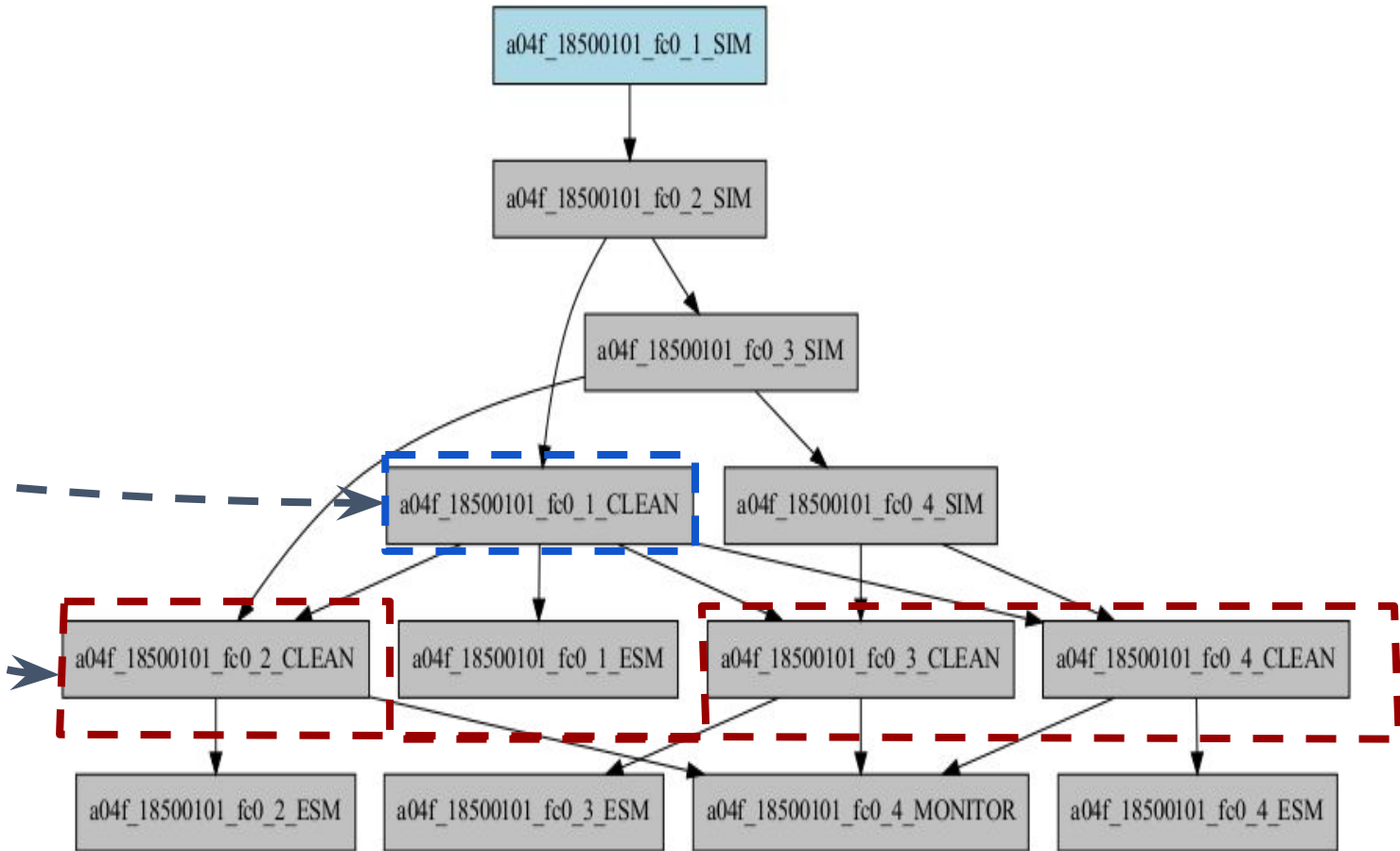
3.14.0 - Flexibility - Weak Dependencies

```
[LOCAL]

FILE= SIM2.sh

RUNNING= once

[DOWNLOAD]

FILE= SIM.sh

RUNNING= once

[COMPILE]

FILE= SIM2.sh

DEPENDENCIES= LOCAL DOWNLOAD?

[SIM]

FILE=SIM2.sh

DEPENDENCIES= SIM-1 COMPILE

RUNNING=chunk
```
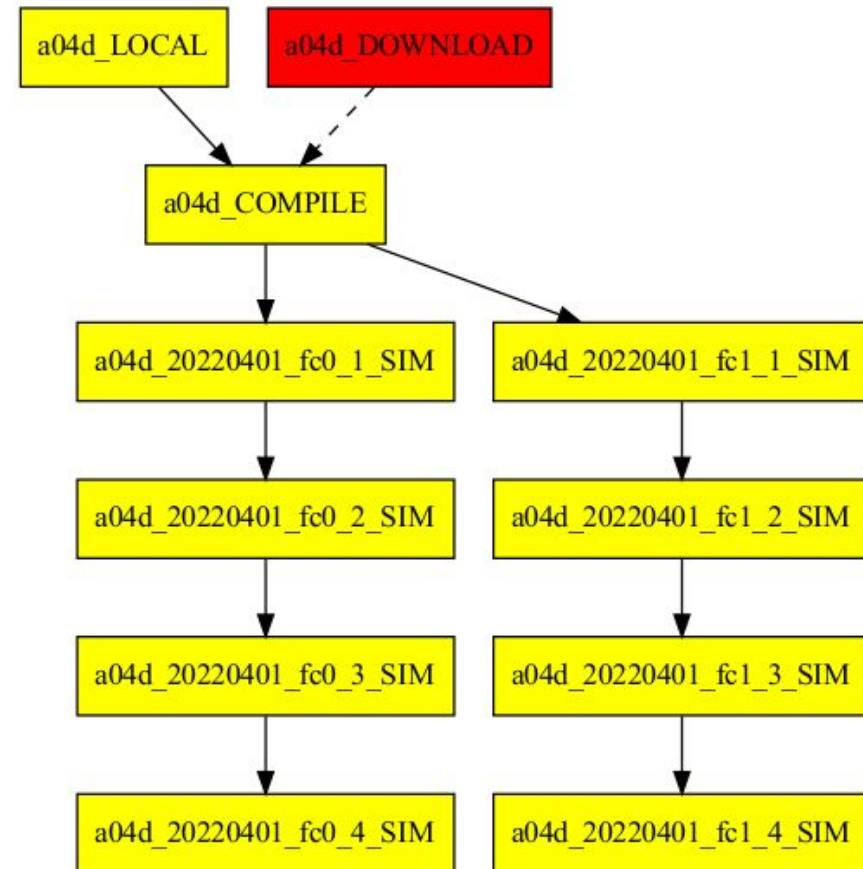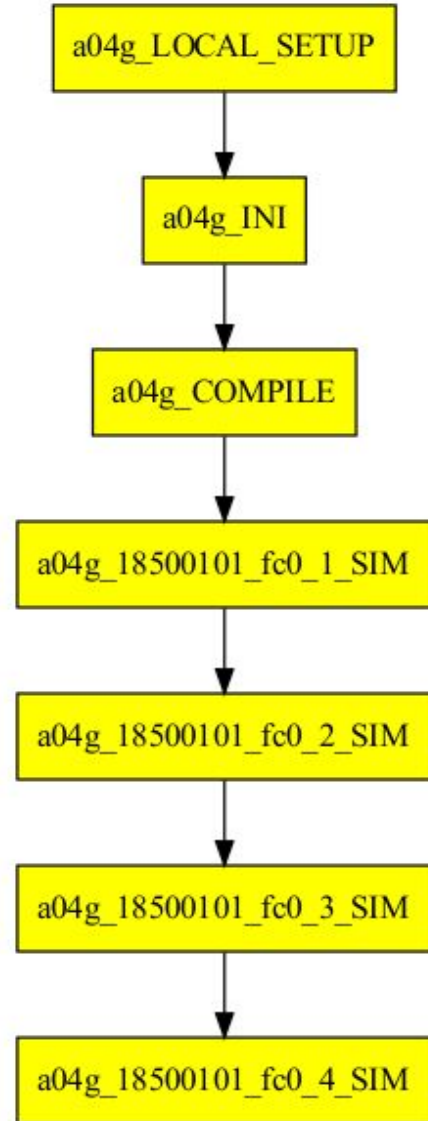
3.14.0 - Flexibility - Rerun


```
[LOCAL_SETUP]

FILE=local_setup.sh

RUNNING=once

[INI]

FILE=ini.sh

RUNNING=once

DEPENDENCIES=LOCAL_SETUP

[COMPILE]

FILE=compile.sh

DEPENDENCIES=INI

RUNNING=once

[SYNC]

FILE=sync.sh

RUNNING=once

RERUN_ONLY=True
```
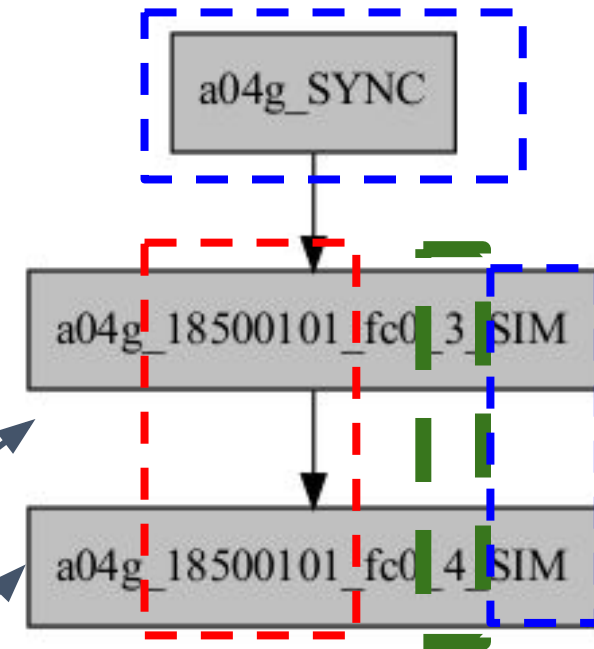
```
[SIM]

FILE=SIM.sh

DEPENDENCIES= SYNC

SIM-1 COMPILE

RUNNING=chunk
```

```
[rerun]

RERUN = TRUE

RERUN_JOBLIST = SYNC;SIM[18500101[C:3-4]]
```

3.14.0 - Behavior - Time constraints

To control time between retrials.

AUTOSUBMIT.CONF

```
[CONFIG]

DELAY_RETRY_TIME=10+
```

```
JOBS.CONF
```

```
[SIM]

DELAY_RETRY_TIME=5*
```

To add different wallclock for each chunk.

```
[SIM]

RUNNING=chunk

WALLCLOCK=00:05

WCHUNKINC=00:01
```

Wallclock is applied to all platforms.

3.14.0 - Behavior - Total jobs

TOTALJOBS: Max total jobs.

MAX_WAITING_JOBS: Maximum number of jobs that can be active (without counting running) it only counts (submitted,queuing) for each platform.

Wrappers counts as a single job.

```
[CONFIG]
TOTALJOBS = 5
MAX_WAITING_JOBS = 30
```

```
[MARENOSTRUM4]
TOTALJOBS = 99
MAX_WAITING_JOBS = 2
[transfer]
TOTALJOBS = 2
MAX_WAITING_JOBS = 999
```
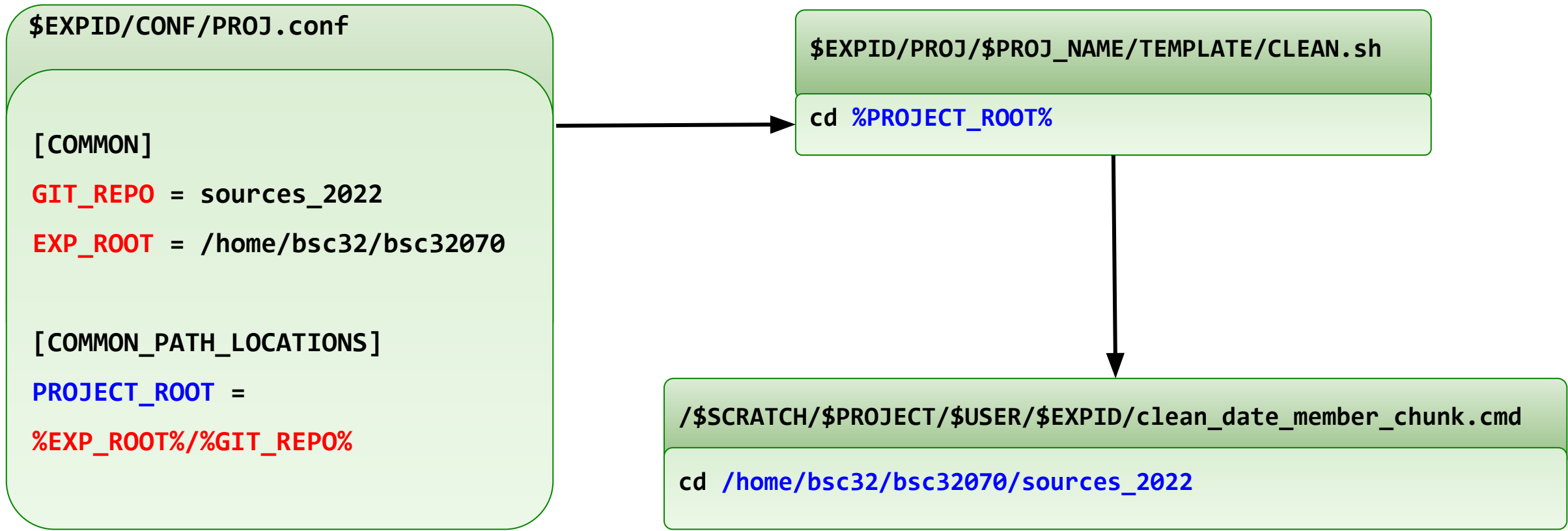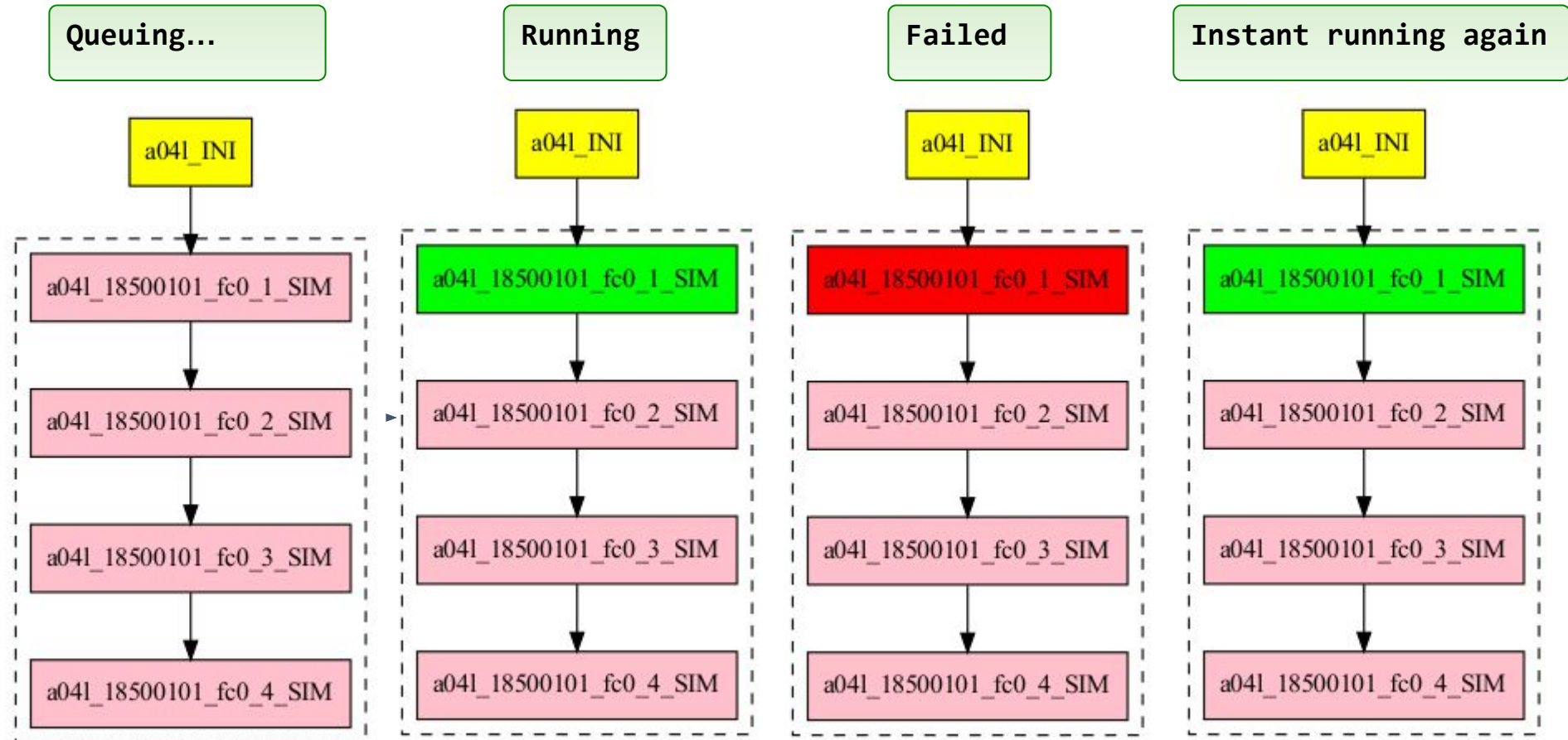
```
[WRAPPER]
MIN_WRAPPED = 2
MAX_WRAPPED = 9999
MIN_WRAPPED_H = 2
MAX_WRAPPED_V = 9999
```

3.14.0 - Behavior - Placeholders

$EXPID/CONF/PROJ.conf

[COMMON]

GIT_REPO = sources_2022

EXP_ROOT = /home/bsc32/bsc32070

[COMMON_PATH_LOCATIONS]

PROJECT_ROOT =
%EXP_ROOT%/%GIT_REPO%

$EXPID/PROJ/$PROJ_NAME/TEMPLATE/CLEAN.sh

cd %PROJECT_ROOT%

/$SCRATCH/$PROJECT/$USER/$EXPID/clean_date_member_chunk.cmd

cd /home/bsc32/bsc32070/sources_2022

3.14.0 - Wrappers - Vertical retrials

[WRAPPER]

TYPE = vertical

JOBS_IN_WRAPPER = SIM

EXTEND_WALLCLOCK = 1

Queuing...

Running

Failed

Instant running again

a04l_INI

a04l_18500101_fc0_1_SIM

a04l_18500101_fc0_2_SIM

a04l_18500101_fc0_3_SIM

a04l_18500101_fc0_4_SIM

3.14.0 - Wrappers - Multi-wrappers

```
[WRAPPER]

TYPE = multi

WRAPPER_LIST =

WRAPPER_0,WRAPPER_1

[WRAPPER_0]

TYPE = vertical

JOBS_IN_WRAPPER = SIM

[WRAPPER_1]

TYPE = horizontal-vertical

JOBS_IN_WRAPPER = SIM2
```
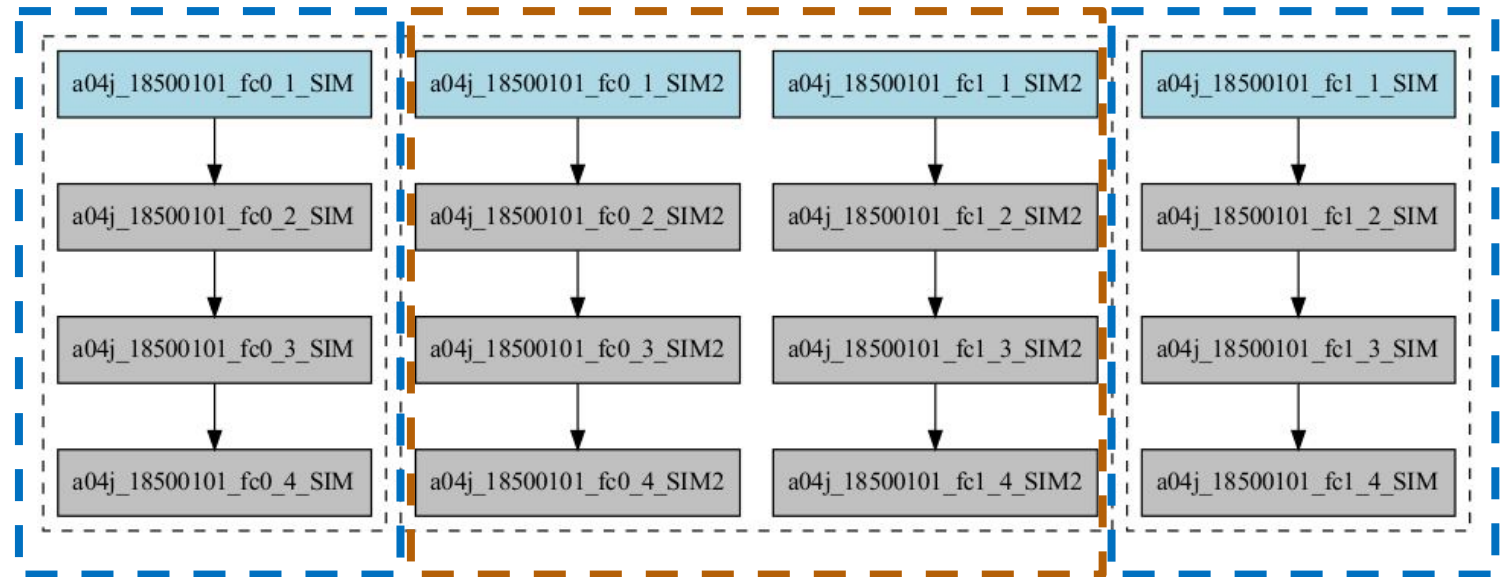
3.14.0 - Project - News

$EXPID/conf/expdef.conf

```
[git]

PROJECT_ORIGIN =

https://earth.bsc.es/gitlab/dbeltran/as-githo

ok.git

PROJECT_BRANCH = main

PROJECT_COMMIT =

PROJECT_SUBMODULES =

FETCH_SINGLE_BRANCH = true

PROJECT_SUBMODULES_DEPTH = 100
```

$EXPID/proj/git_hooks/.githooks

```
if [[ ! -f ".githooks/post-checkout_completed" ]] ;

then

  echo "Running post-checkout githook to configure the

SVN repositories for sources"

  git submodule init sources/

  git submodule update

--depth=%PROJECT_SUBMODULES_DEPTH% sources/

  cd sources/

  set_svn

  cd ..

  touch .githooks/post-checkout_completed

  echo "SVN repository set up, post-checkout githook

completed"

fi
```

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Autosubmit 4 - Quick look

Autosubmit 4 - Beta - Features

- **DestinE Version.**
- **Autosubmit 4 upgraded to Python 3**.
- Better documentation.

Configuration files language has changed to YAML and features:

- Case insensitive sections (normalized to upper-case).
- Special keywords added.
- Modular configuration, files can be anywhere.
- Hierarchy parameters.
- Simplified wrapper definition.

Dependencies reworked:

- Fine gradually allowing task-to-task relationships
- Unified select,includes,exclusion parameters.
- New parameters to allow edgeless jobs (False by default).

Work in progress

- Placeholders for all files
- Support for new platforms
- Autosubmit GUI support

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Thank you

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