



Koninklijk Meteorologisch Instituut

Institut Royal Météorologique

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# Node Runner Status

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# What is Node Runner ?

- An ECflow based script set for basic DA cycles.
- Started as new scripting system for RMIB. Early version is already used in operational suite. Now being made more general for DAsKIT.
- Now being prepared for more common usage.
- Mainly **python** code (for Ecflow) and **bash**.
- Emphasis on easy installation of new (experimental | operational) suites and versions.
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# Recent progress

- Porting to CCA and TEMS
- Simplify the python code and the configuration files for porting.
- Isolate all “RMI-specific” code in a few configuration files.
- The more “freedom” in local setup, the more work in porting and configuring Node Runner.



# How to start: installation

- **NOTE:** the current code still needs some work to be considered ready for general use. But adventurous souls are welcome give it a try.
- Clone the git repository on ecgate. The clone's directory name should be the name of your new ecflow suite.  
`git clone ~cv6/NodeRunner mysuite`
- In mysuite, create a mysuite.ini configuration file (there are various examples from RMI suites in the ini subdirectory.
- Other files that will (probably) need modifications: include/\*
- On a *new platform*, some more porting may be needed for the scheduler script and modules/nr\_topology.py
- Binaries (MASTERODB etc.) & climate files are NOT part of Node Runner. They should be installed directly on the HPC side.
- Namelists are on the “server” side, but are sync'ed to the HPC side.



# How to start: first run

- Initialise the suite with `./init_suite [mysuite.ini]`. This will create and prepare all directories at the HPC side (assuming clim files, MASTERODB etc are available).
- `./restart YYYYMMDDHH` will start the suite at a particular day/hour.
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# How to start: first run

The image shows two windows side-by-side. The left window is a terminal running a text editor (gvim) on a file named 'ao40\_rerun.ini'. The right window is the ecFlowUI (4.14.0) interface showing a hierarchical view of job nodes.

**Terminal Window (Left):**

```
Terminal - dalex@hugin:~/ECF/ao40_rerun
ao40_rerun.ini (~/.ECF/ao40_rerun) - GVIM (on hugin.oma.be)
File Edit Tools Syntax Buffers Window Help
[suite]
# suite_name = alaro_40_oper
# mode: oper for the ACTUAL OPERATIONAL RUN, exp for other
#   main differences: queue
# "oper" will try to submit to a reservation owned by HPC_USER
suite_mode = oper
# wait for another suite to finish?
# NOTE: the suite MUST exist on the same server
#trigger = /alardo_double_hpc/4km/run/{cycle}/post_processing
#trigger = /alardo_4km/cycle/00/forecast
# NOTE: the current operational cycles are "cron" nodes
#   so they are never "complete". You must use a sub-node as trigger
trigger =
realtime = no

[platform]
platform = rmi_hpc
header = pbs.h
scheduler = schedule_rmi

ncores_forecast = 26*24
ncores_pre = 1
ncores_pos = 12
walltime_forecast = 10*60/26
walltime_pre = 15
walltime_pos = 5

[cycle]
```

**ecFlowUI Window (Right):**

- hugin > ao40\_rerun > cycle > midnight > initialisation > init\_forecast
- ao40\_rerun
  - LAST\_QUEUED: 2021071512
  - LAST\_RUNNING: 2021071512
  - max\_postproc: 0/18
  - init\_suite
  - maintenance
  - cycle
    - midnight
      - RUNDATE: 2021071500
      - initialisation
        - init\_forecast
        - copy\_namelist
        - sync\_data
        - init\_workpaths
      - lbc
        - Name: lbc
        - Path: /ao40\_rerun/cycle/midnight/lbc/prep\_lbc:lbc\_counter >= 2 )
        - Type: family
        - Status: complete
        - Default status: queued
        - Server: hugin
        - Host: hugin.oma.be Port: 12195
        - Icons:
          - Has node log entry
          - complete AND ./post == complete
      - queue\_next
      - finish
      - morning
      - midday
      - evening
- ao13\_tuned
  - LAST\_QUEUED: 2021092018
  - LAST\_RUNNING: 2021092018
  - DELAY
  - max\_postproc: 0/18
  - init\_suite
  - maintenance
  - cycle

- Documentation !!!
- Finish & test porting to TEMS (=Bologna test machine) and virtual Ecf flow server.
- “man” entries in the ecf tasks.
- More testing of various 3D-Var scripts on other platforms (ECMWF...)
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**Thank you**