OpenMOLE

www.openmole.org

Open MOdeL Experiment

A generic workflow platform for distributed experiments on complex-system models

Large scale computing

- Compute transparently on multi-core machines, clusters, and grids: no particular knowledge is required to access massively parallel environments
- Embed your own programs in less than 5 clicks (C, C++, Java, Scala, Scilab, R, Python, Netlogo, ...)
- Design your distributed process using a powerful workflow approach (loops, alternative processing, massive parallelism)
- Prototype your workflow locally and take advantage of the parallelism with no extra effort: the Zero-deployment approach does not require any installation step on remote machines
- Use OpenMOLE as a scalable computing engine for your web portal (ex: bioemergences.eu is powered by OpenMOLE)

Explore your models

- Embed your model
- Design your model exploration:
  > design of experiments,
  > stochastic model replication,
  > calibration,
  > sensitivity analysis,
  > ...
- Distribute the numerous executions of your model to explore it:
  > on your multi-core computer // speed up around 4
  > on a multi-core server // speed up around 50
  > on a cluster // speed up arround 200
  > on a grid // speed up > 1000
- Reuse your experiments on several models

More information: **www.openmole.org**

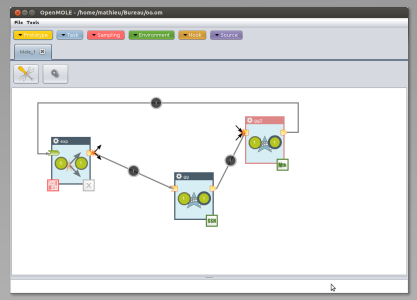
Subscribe to the newsletter : **users@list.openmole.org**

OpenMOLE: for whom? for what?

- Are you a computer scientist?
  Script your workflow!

```
val i1 = Prototype[Int]("i1")
val i2 = Prototype[Int]("i2")
val j = Prototype[Int]("j")

val hello = GroovyTask("hello", "j = Model.compute(i1, i2)")

hello addInput i1
hello addInput i2
hello addOutput j
hello addLib "/path/to/model.jar"

val exploration = ExplorationTask(
    "exploration",
    Factor(i1, 0 to 100 by 2 toDomain) x
    Factor(i2, new UniformIntDistribution take 10)
  )

val ex = exploration -< (hello by 10 on biomed) toExecution
ex.start
```

- Do you make typos, or do you prefer graphical applications?
  Use the click and run Application!



- Do you need large scale computing facilities for your web site?
  Use the OpenMOLE web-server!