
Grid Computing School
July 10-12, 2006.
Rio de Janeiro



Hands-on with the P-GRADE/GEMMLCA Portal

1. Login to the Portal

- 1.1 Go to the URL:
`https://gngs-portal.cpc.wmin.ac.uk:8080/gridsphere/gridsphere`
- 1.2 Use your account and password to login

2. Download a short-term proxy credential from the MyProxy server into the Portal server. The proxy will be used by the workflow manager during workflow execution.

- 2.1 Hit the "Certificates" tab
- 2.2 Click on the "Download" button
- 2.3 Submit the download form with the following data:
 - Hostname:** node40.cluster.cpc.wmin.ac.uk
 - Port:** 7512
 - Login:** userXY
 - Password:** userXY
 - Lifetime:** 10
 - Description:** <optional>
- 2.4 If download is successful then set your proxy for the "NGS" Grid

3. Use the "Settings" tab to view available resources.

- 3.1 Available Grids are listed here as it was set by the portal administrator. Hit the resources button besides the Grid and view available resources.
- 3.2 You can load default resources specified by the portal administrator by hitting the "Load default" button.
- 3.3 You can also load resources from the MDS2 information system.
- 3.4 Your training certificate enables you to submit jobs to Westminster (wmin) resources. Only these resources will be used during this tutorial. Delete all the other resources from your resource list. The resources you have to **keep**:
 - `grid-compute.cpc.wmin.ac.uk` (both condor and fork)
 - `http://gn6.cluster.cpc.wmin.ac.uk:8082/wsrp/services/uk/ac/wmin/cpc/gemmlca/frontend`
 - `http://node40.cluster.cpc.wmin.ac.uk:8082/wsrp/services/uk/ac/wmin/cpc/gemmlca/frontend`
 - `http://westfocus.cpc.wmin.ac.uk:58088/wsrp/services/grid-compute.cpc.wmin.ac.uk`

4. Create a traffic simulation workflow combining standard and GEMMLCA jobs

The aim of this exercise is to demonstrate the difference between standard and GEMMLCA jobs. The first component of your workflow will be a standard

job where you have to define the executable and parameter format. The rest of the workflow will be composed of GEMMLCA jobs selected from the repository. A description of the workflow and the "manhattan" executable can be downloaded from <http://agenda.cern.ch/fullAgenda.php?ida=a062428>

4.1. Create a standard job using the "Manhattan" executable

4.1.1 Create a new standard job in the workflow editor. Go into properties by right-clicking on the job and set job type as "Standard job". Define the job with the following parameters:

Name: manhattan
Job type: SEQ
Job executable: <path of "manhattan" executable>
Attributes: -r 10 -c 10 -w 150 -h 150 -C 2 -R 5
-n file.net -t file.trn
Grid: NGS
Resource: UoW GT2 resource

4.1.2 Define a port for the job with the following parameters:

Port Name: 0
Type: out
Internal File Name: file.net

4.1.3 Define another port to the job with the following parameters:

Port Name: 1
Type: out
Internal File Name: file.trn

4.1.4 Save and submit your workflow. Monitor and visualize the progress of execution.

4.1.5 Download and unzip the result file.

4.2 Extend your workflow with 3 additional GEMMLCA jobs

In this exercise you will utilize already published legacy codes in your workflow from the GEMMLCA repository. The executables of these programs are already uploaded, you only have to specify actual parameter values.

4.2.1 Open your previous workflow in the workflow editor and create a new GEMMLCA job. Go into properties by right-clicking on the job and set job type as "GEMMLCA job". Double click on the job and go into job properties. Define a job with the following parameters:

Name: Sim1
Grid: NGS
Resource: Any UoW GEMMLCA resource
Legacy code: MadCity traffic simulator
Parameters with default values and ports are created automatically. Keep default parameters for this job.

4.2.2 Define another job with the following parameters:

Name: Sim2
Grid: NGS
Resource: Any UoW GEMMLCA resource
Legacy code: MadCity traffic simulator
Change the parameter value "starting car density" from 14 to another value.

4.2.3 Define your last job with the following parameters:

Name: Compare
Grid: NGS

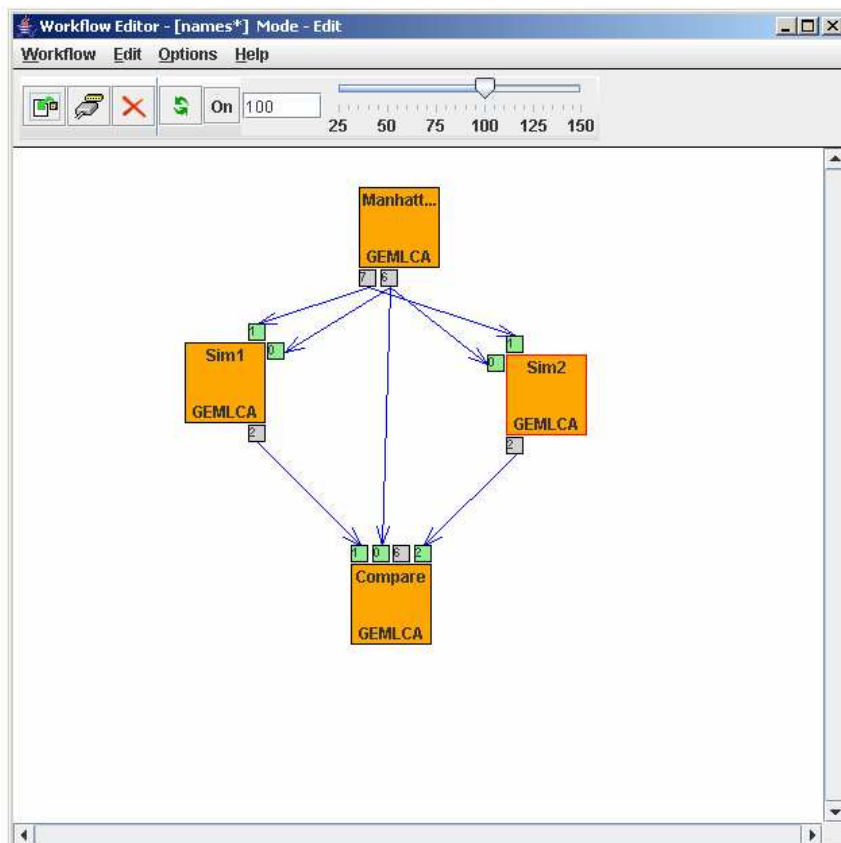
Practical hands-on with GEMMLCA

Resource: Any UoW GEMMLCA resource

Legacy code: Trace compare

Keep default parameter values.

4.2.4 Draw the workflow graph as follows:



4.2.5 Save the workflow, submit it, visualize execution, and download results.