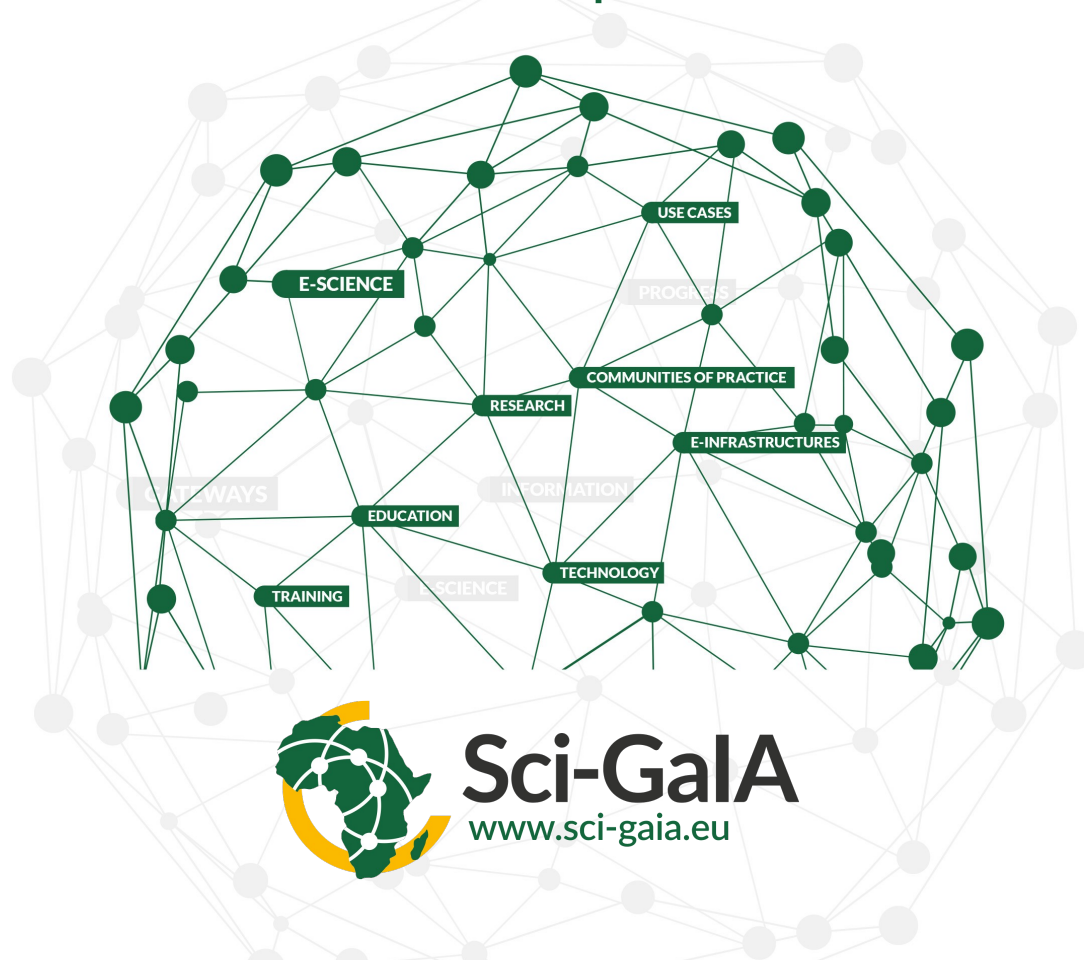


WIMEA – ICT: Science Gateway to interact ICT tool WRF

Final report



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Outline

- Scientific problem
- Work done during the Hackfest
- Results
- Future plan
- Summary and conclusion
- Acknowledgements

Scientific problem

- Running a numerical weather predictive tool like WRF over a Unix/Linux infrastructure (HPC) which accept only the access by command line is difficult in most case to most of users and they won't get good results.
- Insufficient number of meteorologists who could support junior researchers/scientists and students to utilize available Unix infrastructures (HPC), particularly the use of WRF.
- Increasing number of users and interested collaborators and partners of WIMEA – ICT through the use of Science Gateway (web portal).

Work done during the Hackfest

- The development of the Future Gateway involved the following tools;
- HPC infrastructure – deployment of WRF and WPS tool;
 - Required softwares: GCC, Fortran, C compiler, netCDF, MPI/OpenMP libararies,
- Science Gateway tools used;
 - Portlets: Liferay, Tomcat
 - GridEngin: JSAGA

Results

- The development is almost 75% with minor bugs from WRF running test case.
- The testing “hello job” in the file sayhello.txt was submitted to future gateway infrastructure with the command;

```
curl -i -F "file[]=@sayhello.txt" -F "file[]=@sayhello.sh"  
http://localhost:8888/v1.0/tasks/4/input?user=brunor
```

- Got successful result after the job submission and being executed.
- The image (running vm) of the WRF science gateway portlet has interfaces belows;

Results

- Setup interface

WRF Portlet - Configuration

Setup

Permissions

Sharing

Generic application preferences

Save

Futuregateway host: (Required)

151.97.41.48

Futuregateway port: (Required)

8888

API version: (Required)

v1.0

Results

- WRF science gateway



Application input

Input file

Choose File No file chosen

Job label

test_20160728122251

This application submit a job that perform WRF analysis on the uploaded input file.

Please use the following form to upload the archive that contains your inputs and then press '**Submit**' button to launch this application.

Future plans

- Debug WRF, set infrastructure for deploying (importing WRF Science Gateway image) and put the portal in production by the end of the workshop in Dar es Salaam on 5th September 2016
- Promote the use of the WIME - ICT WRF science gateway, for a working interested group in order to improve the portal, link students (Msc, PhD) and industrial meteorologists.
- Develop another science gateway for the other useful tools, indeed deploy full working science gateway ready for the the transfer of ei4Africa science gateway.
- Cooperate with the team for the development of other tools as per demand
- Participate on the future event for the same

Summary and conclusions

- WIMEA – ICT Science Gateway for ICT WRF is deployed to the image ready to be imported to the environment at DIT.
- Development is not an easy work, I think the development process guided by the teams went smoothly and I had no problem, except for the fact that the time is too shortly regarding that learning tools and deploying them is a process.
- For the sustainability, I would conclude by recommending for the same upcoming events to have more time, at least one month to test the tool up to the running system.

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Ahsanteni

Thank you!

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