wbGPU

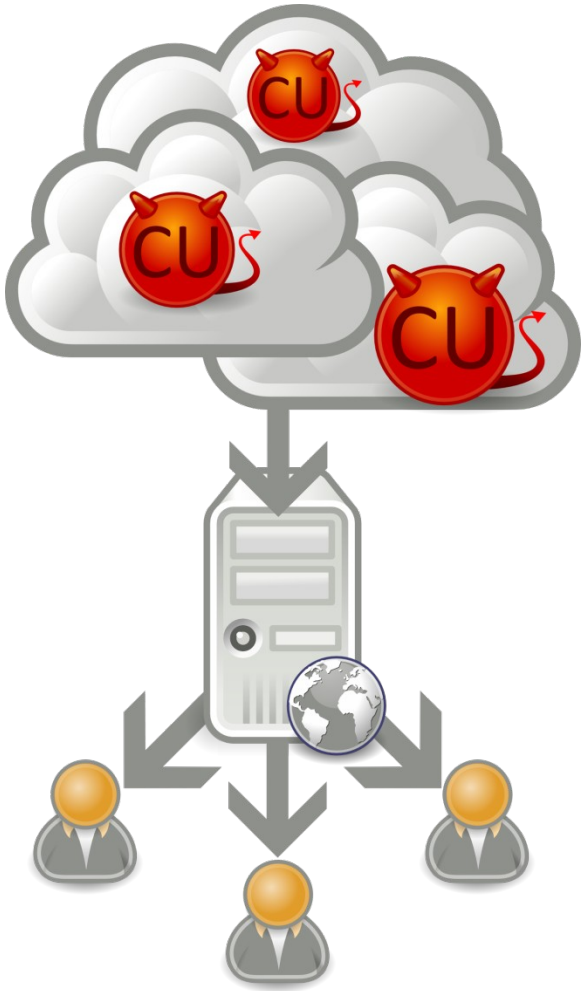
A way to have 10,000 people participate in a CUDA course with just a web browser.

Purpose

- Allow people without a GPU to participate in the course.
- Make it more user friendly to submit the MPs from any system and from any computer.
- Maybe a model for future versions of the UIUC CUDA course.

Architecture

- Some CU daemons live in the cloud.
- They register their services with a server.
- The users communicate with the web server which then distributes the job to one of the daemons.
- Highly parallel and fault tolerant.



Status

- Almost done.
- Third implementation (in the third language) must account for something.

Demo

Scenarios

- User inputs a program that won't compile – return an error.
- User wants to time sections of the code – a timer library is included in the code.
- User wants to see the values of expressions in the code – a logging library is included in the code.
- User wants to look at previous attempts – all previous attempts are recorded and shown.
- User submits a program that's an infinite loop – the daemon launches the program as a separate application and kills it after a certain time.

Next Steps

- Port the MPs to this interface (this may require adjusting the wording of the MPs).
- Add some code that checks if the output returned is what is expected.
- Come up with a formula to fairly grade the MPs based on timing and correctness.
- Beef up the scheduler, currently it nonexistent.
- Testing especially with AWS (we need to create an account that would charge the right people).
- Need to test on browsers other than chrome.
- Implement login system.
- Allow people to submit jobs and see the results at a later time (useful when we exhausted all our cloud resources).