

# Implementing and Evaluating Multi-Resource Scheduling Design in Slurm

Report Dated: 03/27/2019

1. Read Slurm Simulator paper “Evaluating SLURM Simulator with Real-Machine Slurm and viceversa” from [https://sc18.supercomputing.org/proceedings/workshops/workshop\\_pages/ws\\_pmbsf113.html](https://sc18.supercomputing.org/proceedings/workshops/workshop_pages/ws_pmbsf113.html)
2. Read the next version of the above paper which is “A Slurm Simulator: Implementation and Parametric Analysis” from [https://www.researchgate.net/publication/322026152\\_A\\_Slurm\\_Simulator\\_Implementation\\_and\\_Parametric\\_Analysis](https://www.researchgate.net/publication/322026152_A_Slurm_Simulator_Implementation_and_Parametric_Analysis)
3. Read the recent paper from authors of the above papers on Slurm Simulator: “Slurm Simulator: Improving Slurm Scheduler Performance on Large HPC systems by Utilization of Multiple Controllers and Node Sharing” from <https://dl.acm.org/citation.cfm?id=3219111>
4. Read and understood the code of Slurm simulator from <https://github.com/ubccr-slurm-simulator>
5. Installed Slurm Simulator in docker using the Simulation tools from [https://github.com/ubccr-slurm-simulator/slurm\\_sim\\_tools](https://github.com/ubccr-slurm-simulator/slurm_sim_tools). Faced a lot of issues while installing and have resolved each of them.
6. Since, the above simulator is based on a pre-configured set of files, I have installed only the Slurm simulator on a docker image of Cent OS 7. This would enable us to run the configuration we need. This has been successfully installed.
7. Converted the job traces from Standard work load format to the format accepted by the Slurm using an R Script.
8. Completed the remaining part of C Code for the MOO Implementation.

Plan for the coming few days:

1. Checking the Slurm Simulator working with the Job trace generated.(Installation of github code took a long time as many errors had to be resolved. Installation file given in github didn't have correct information)
2. Need to work on how to incorporate burst buffer in the Simulator.