

Checkpoint 1:

[X] Added sections Timeline and Concerns to README.md as these were missing. Sections Challenges was already in the project proposal.

<https://github.com/CU-CSCI7000-Fall2019/final-project-csci7000-container-network-op/commit/e9ffb14600743e288635b9d217217a84ffa3670b>

[X] Added Checklist as a GitHub issue to track progress.

<https://github.com/CU-CSCI7000-Fall2019/final-project-csci7000-container-network-op/issues/1>

New TimeLine

Timeline should stay on course. Now that the OpenStudio-server deployment configs have been updated to run within a k8s environment, I can begin testing out RDMA and Slim in various cloud envs to attempt to improve network I/O. By semester ends I should have enough time to get one of the two options (Freeflow and/or Slim) to evaluate performance improvements as it relates to network latency, throughput and resource (cpu) consumption.

Additional Concerns

My initial look at cloud offerings on AWS and Google I did not see VM instances that have RDMA enabled NICs. I also looked through the Cloud hardware on CloudLab and didn't see RDMA support either. I will look into Microsoft Azure, but if no Cloud Providers offer RDMA NIC then testing FreeFlow may not be possible. Slim should be okay given that it modifies the VM itself which should be doable.

Evaluate and Validate project

Evaluation will be done by measuring network performance improvements as it pertains to running energy modeling simulations on both the standard k8s setup (no optimizations) vs running on FreeFlow and/or Slim and measuring the performance gain as it pertains to network throughput, latency and resource utilization.

