An Auto-Scaling Cluster Using Slurm

CS5352 Course Project, Spring 2021

[This project accepts two students.]

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**Description**

Slurm is one of the top open-source job schedulers and workload managers of data centers. It controls HPC jobs to access the resources of data centers and manages a queue of pending jobs. It also helps to monitor HPC jobs.

Slurm supports on-demand grows and shrinks of a cluster's size in the HPC or cloud environment (such as Amazon EC2 and Google Cloud Platform).

This research aims to study the Slurm configuration parameters that help us configure the size of a cluster and Deploy an Auto-Scaling HPC Cluster with Slurm in a cloud environment or on a virtual HPC cluster.

**Steps:**

1. Slurm configuration parameters that help us configure the size of a cluster.
2. Deploy an Auto-Scaling HPC Cluster with Slurm in a cloud environment or on a virtual HPC cluster.

**Requirements:**

* Familiar with parallel computing
* Familiar with High-Performance Computing Systems or Cloud environments.

**References:**

1- https://slurm.schedmd.com/documentation.html

2- https://codelabs.developers.google.com/codelabs/hpc-slurm-on-gcp#0