Work to do for this week

Ke Wang <kwang22@hawk.iit.edu>

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To: hchen71@hawk.iit.edu
Cc: Xiaobing Zhou <xzhou40@hawk.iit.edu>

Hi Hao,

Would you please help us do some work about the distributed job launch project, and get some data this week? We are going to submit a paper to IPDPS conference, which is due on October 18th.

Basically, what you need to do is running SLURM benchmark experiments. You can first install SLURM and write some scripts to do experiments. The version of SLURM you are going to use is: 2.5.3. The experiments I expect you to do are:

1. small jobs
For m nodes, run m jobs with each one requiring one node. Increasing m from 50 by 50 every time. For example: m = 50, 100, 150, 200, 250, ... up to 500.

2. medium jobs
For m nodes, run m jobs with each one requiring 1-50 nodes randomly. Also, Increasing m from 50 by 50 every time. For example: m = 50, 100, 150, 200, 250, ... up to 500.

3. large jobs
For m nodes, run m jobs with each one requiring 50-100 nodes randomly. Also, Increasing m from 50 by 50 every time. For example: m = 50, 100, 150, 200, 250, ... up to 500.

You can run it on the Kodiak machine, which I will give you instructions about how to get an account, and how to allocate resources. The jobs currently are sleep jobs, and we will do sleep 0 jobs. The results we will get are throughput (jobs/sec). Xiaobing could help you about how to use Kodiak machine, how to install SLURM, and how to get it running on Kodiak.

After you finish the experiments on Kodiak, would you please also run SLURM on the Jarvis cluster up to 10 nodes to see how much faster can SLURM achieve than the old Kodiak machine. We want to make sure that we didn't do SLURM wrong.

The link for SLURM is: http://www.schedmd.com/slurmdocs/

The Kodiak Machine weblink is: http://kodiak.nmc-probe.org/. You can register an account, and choose the project under Mike Lang and USRC. I will send an email to Mike to give your permit for Kodiak machine. Ask Xiaobing and come to my office if you have any problems.

Thanks.

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Ke Wang, Ph.D Candidate.
Department of Computer Science, Illinois Institute of Technology (IIT)
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Data-Intensive Distributed Systems Laboratory, CS/IIT
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Cel:
1-312-532-2105
Addr:
10 W. 31st Street
Stuart Building, Room 003B
Chicago, IL 60616
Email:
kwang22@hawk.iit.edu
kewangiit@gmail.com
Web:
http://datasys.cs.iit.edu/~kewang/
http://datasys.cs.iit.edu/
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Because the Jarvis just has about 10 nodes, you can just increase the number of nodes one by one, and the number of jobs 50 by 50. For example, for 1 node, you run 50 jobs, 2 nodes run 100 jobs, and ... 10 nodes run 500 jobs. Just get the time stamp and calculate the throughput.