15-319 Introduction to Cloud Computing

Assignment B

Data-Intensive Supercomputing: The Case for DISC

Assigned Date: January 26st 2010
Deadline: February 9th 2010

Goals:

1. Appreciating the challenges that result from the different demands on computing systems from applications with large and vast quantities of data.
2. Understanding the research topics that DISC brings up in system design, resource management, programming models, parallel algorithms, and applications.
3. Basic Understanding of Data-Intensive Super Computing (DISC) and how could it be used to improve complex research computations.
4. Exploring different examples and areas where DISC was used and the benefits gained from using it among these areas.

Assignment:

Read the paper provided to you: *"Data-Intensive Supercomputing: The Case for DISC"*, *by: Randal E. Bryant.* In a short write-up, highlight and explain the major points that you comprehend from the paper, what are the take-home messages and do you agree with them? What are the advantages and disadvantages of the presented technology? What are the new challenges for this new computing model?

The paper can be downloaded using the following URL:

http://www.cs.cmu.edu/~bryant/pubdir/cmu-cs-07-128.pdf

There are slides and video on the web of several presentations that Randy gave.

A class discussion will be held to converse in detail about this paper. Make sure that you have your notes or write up with you so that they can help you during the discussion.

Reading a technical paper can be difficult and time consuming but very rewarding. You will definitely need to read the paper more than once to understand it. Thus, keep your first time quick to get an overall idea about the topics discussed. Take notes as you read on what you understand, what needs clarification and what you should look up. Also

have a list of questions or discussion points. Refine your list through several readings of the paper. After several iterations, start on the write-up.

Keep in mind that you will be graded on both your write-up and your participation during the class discussion. So, make sure that you do not miss either of them.

Deliverables

- Write-up: including a summary of the main points that you understood from the paper, your opinion regarding the technology presented, and the points that you did not understand, or did not agree with.

Submission

- Your write-up file name should be named Assgmnt2_yourID_paper.doc. The paper should be in the 2-column ACM format.

- Copy your files to the following afs folder before the deadline:
    `/afs/qatar.cmu.edu/course/15/319/handin/userID`

    Note: Do not work in this directory; just copy your files prior to the deadline.

- You must turn in the assignment on February 9th at the beginning of class. We will hold an in-class discussion after you turn in your assignment. It is recommended that you keep discussion notes or a copy of your assignment to help you during the discussion.