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1. Latency Experiment

I ran this experiment at 2PM on May 9 2018.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Source City | Destination City | Latency 1 | Latency 2 | Latency 3 |
| Seoul | Dublin |  |  |  |
| Dublin | San Paulo |  |  |  |
| San Paulo | Mumbai |  |  |  |
| Mumbai | Seoul |  |  |  |

* Latency: The time taken to complete an operation
* Throughput: The amount of data exchanged per unit time.
* Bandwidth: The maximum amount of raw data that can be transferred between a source and a destination per unit time.

**Data collection**

**Remote measurements**

**For the overall application throughput, one-way network throughput, and round-trip latency metrics above, collect results each for:**

**Seoul, Korea ↔ Dublin, Ireland**

**Dublin, Ireland ↔ Sao Paulo, Brazil**

**Sao Paulo, Brazil ↔ Mumbai, India**

**Mumbai, India ↔ Seoul, Korea**

**Using the provided AWS account given to you, instantiate one t2.micro instance type in each of the above four locations, which correspond to the AWS regions:**

**ap-northeast-2 (Seoul, Korea)**

**eu-west-1 (Dublin, Ireland)**

**sa-east-1 (Sao Paulo, Brazil)**

**ap-south-1 (Mumbai, India)**

**Perform the measurements three times each of the pairs above (12 sets of measurements in all).**

**Report**

You will need to report on your observations and measurements in a written report, submitted in PDF format to GradeScope.com

Your report (which will likely be 1-2 pages) should include

* + Your raw data in a table. The table should have a row for each source city, and a column for each destination city. In each cell, put the three measurements. Note that if you fill in the cell from city A to B, you don’t need to fill in the cell from B to A.
  + A short description (a few sentences) describing your results–what did you discover running this experiment? What do your results show in terms of the latency between different parts of the world?
* Application-level throughput experiment
  + The date/time you ran the experiment
  + Your raw data in a table. The table should have a row for each source city, and a column for each destination city. In each cell, put the three measurements. Note that if you fill in the cell from city A to B, you don’t need to fill in the cell from B to A. Remember to sort enough data so that the RPC call takes about 20 seconds or so.
  + A short description (a few sentences) describing your results–what did you discover running this experiment? What do your results show in terms of the application-level throughput between different parts of the world?
* Network-level throughput experiment
  + The date/time you ran the experiment
  + Your raw data in a table. The table should have a row for each source city, and a column for each destination city. In each cell, put the three measurements. Note that if you fill in the cell from city A to B, you don’t need to fill in the cell from B to A. Remember to sort enough data so that the RPC call takes about 20 seconds or so.
  + A short description (a few sentences) describing your results–what did you discover running this experiment? What do your results show in terms of the network-level throughput between different parts of the world? How does the application-level throughput compare to the network-level throughput?