

CS15-319 / 15-619

Cloud Computing

Recitation 10

October 29nd and Nov 1st, 2013

Announcements

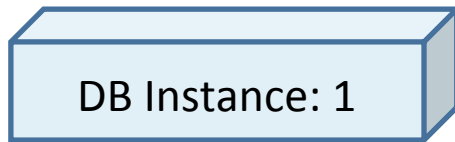
- Encounter a general bug:
 - Post on Piazza
- Encounter a grading bug:
 - Post Privately on Piazza
- Don't ask if my answer is correct
- Don't post code on Piazza
- Search before posting
- Post feedback on OLI

Piazza Questions

- Storage Options
 - Ramdisk
 - Elastic Block Storage (EBS)

Project 3, Module 3 Reflections

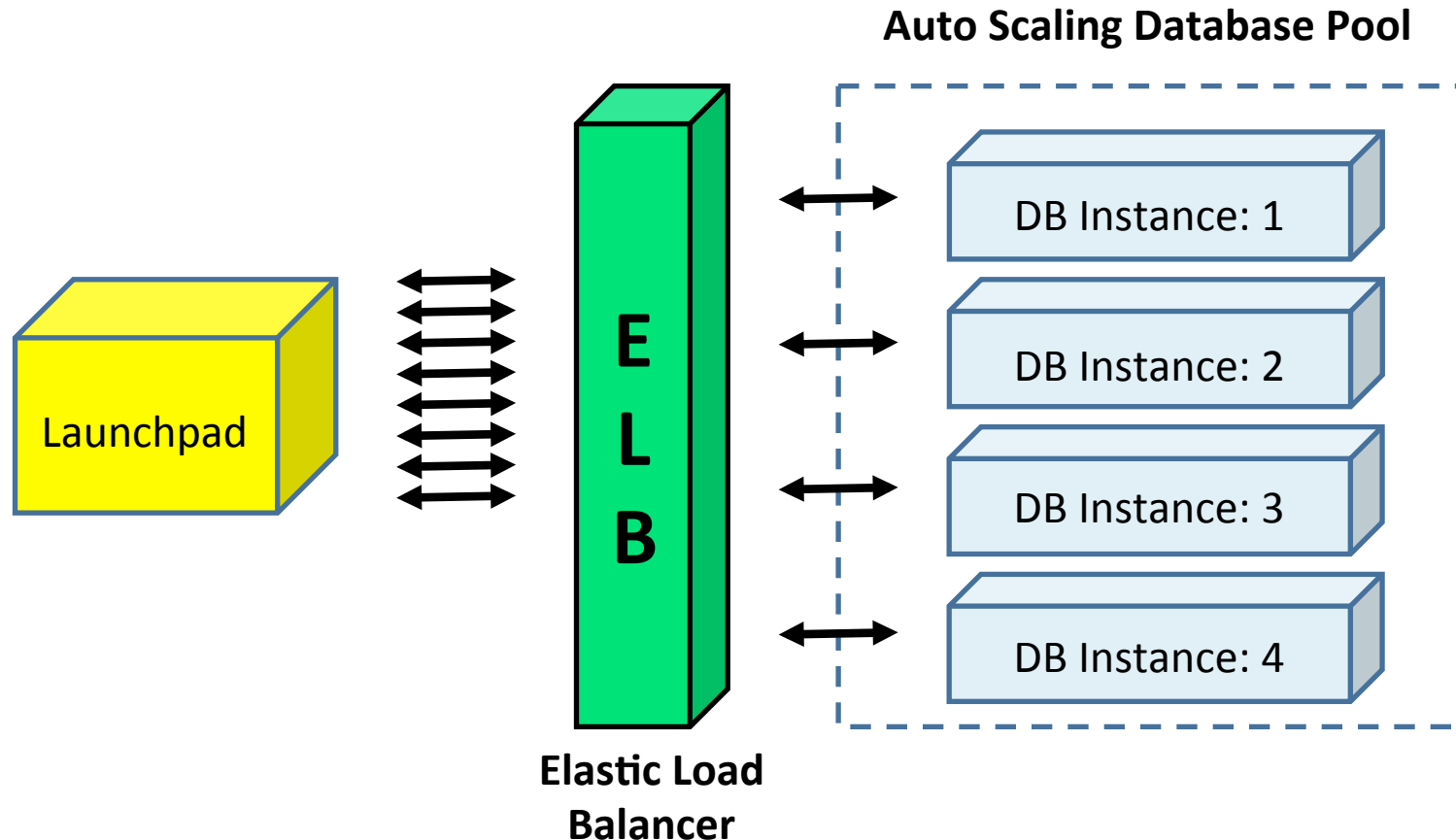
- Custom Metrics



- Queries per Second = $\text{Queries} / \text{Uptime}$
- Transactions Per Second (TPS)
 - Factor in the two queries used to find queries per second and uptime.
 - *sysbench* transaction equals to 16 queries
- Send TPS information to CloudWatch using API

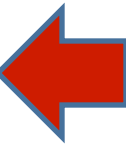
Project 3, Module 3 Reflections

- Horizontal Scaling of Databases



Module to Read

- **UNIT 4: Cloud Storage**
 - Module 12: Cloud Storage
 - Module 13: Case Studies: Distributed File Systems
 - Module 14: Case Studies: NoSQL Databases
 - **Module 15: Case Studies: Cloud Object Storage**
 - Quiz 4: Cloud Storage



Project 3

- Files vs. Databases
 - File vs. Database
- Vertical Scaling in Databases
 - Vertical Scaling
- Horizontal Scaling in Databases
 - Horizontal Scaling
- Working with NoSQL: DynamoDB / Hbase
 - Amazon DynamoDB
 - DynamoDB vs. HBase



Project 3 Module 4

- Amazon DynamoDB
 - NoSQL vs. SQL
 - Larger Scale Data vs. Limited Size Data
 - Consistency Differences
 - High Performance at Very Large Scales
 - Items and Attributes vs. Rows and Columns
 - Solid State Disks (SSDs)
- Your Task
 - Load data into the DynamoDB using the API
 - Configure the web server to read from the DynamoDB

DynamoDB Cost

- Provisioned Throughput Capacity
- Cost Structure
 - **Write:** \$0.0065 per hour for every 10 units of Capacity
 - **Read:** \$0.0065 per hour for every 50 units of Read Capacity
- <http://aws.amazon.com/dynamodb/pricing/>

DynamoDB Cost

- Example:
- Read: 500 Units
- Write 500 Units
- Each Student's Cost
 - \$290 per month
 - **\$10 per day**
- **Class Cost: \$1,500 per day**
- **Switch to free tier or terminate DynamoDB when done or face a grade penalty.**



Review

- What do you do after you finish using DynamoDB?
 - Should be immediately set to 10-read / 5-write (the free usage tier), or simply deleted if you are done.

**SWITCH TO FREE TIER
(10-read & 5-write)**

OR

TERMINATE



Upcoming Deadlines

- Project 3:

Project 3			
Working with NoSQL: DynamoDB / HBase (Gradebook) (Learning Dashboard)			
Amazon DynamoDB	Checkpoint	Available Now Due 11/3/13 11:59 PM	



- Unit 4:

[UNIT 4: Cloud Storage](#)

[Module 12: Cloud Storage](#)

[Module 13: Case Studies: Distributed File Systems](#)

[Module 14: Case Studies: NoSQL Databases](#)

[Module 15: Case Studies: Cloud Object Storage](#)



Demo Outline

- 1. Monitor AWS costs
 - Account Activity
 - Create Billing Alert
- 2. DynamoDB
 - Create DynamoDB Table
 - Check Table Status
 - Put Item into Table
 - <http://docs.aws.amazon.com/AWSJavaSDK/latest/javadoc/>
 - <http://docs.aws.amazon.com/amazondynamodb/latest/developerguide/Introduction.html>