PES UNIVERSITY

14CS341:Cloud Computing

Bookkart as a PaaS Service

using Dockers and Containers.

Cloud Computing | 17/05/2017

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INTRODUCTION

In this project,we built a book store service using LXC Containers which is used to provide its customers the required book along with rating/price as custom values.

ALGORITHM/DESIGN

We have created one Web Role and two Worker Roles. The Web Role does load balancing and schedules the work in a Round Robin fashion to the Worker Roles.

The MySQL server is connected to the two Worker Roles. So,when the user makes a query for a book,the get request is converted into Restful GET request and the Web Role schedules the query to the two Worker Roles in a Round Robin Way which query the database and forward the query to the output interface.

The worker roles are load balanced through the variable load_bal in the server.php file.

EXPERIMENTAL RESULTS

The books are returned with prices/rating depending on the custom values entered or just the booknames matching the tenantid input.

FUTURE ENHANCEMENTS

- User Login and Comments Section
- Scaling the db service.
- Api calls to the DB service from worker roles instead of direct calls.

REFERENCES

https://www.digitalocean.com/community/tutorials/how-to-install-and-use-docker-on-ubuntu-16-04

https://debugmode.net/2014/01/14/create-echo-server-in-node-js/

http://txt.fliglio.com/2013/11/creating-a-mysql-docker-container/

http://stackoverflow.com/questions/22907231/copying-files-from-host-to-docker-container

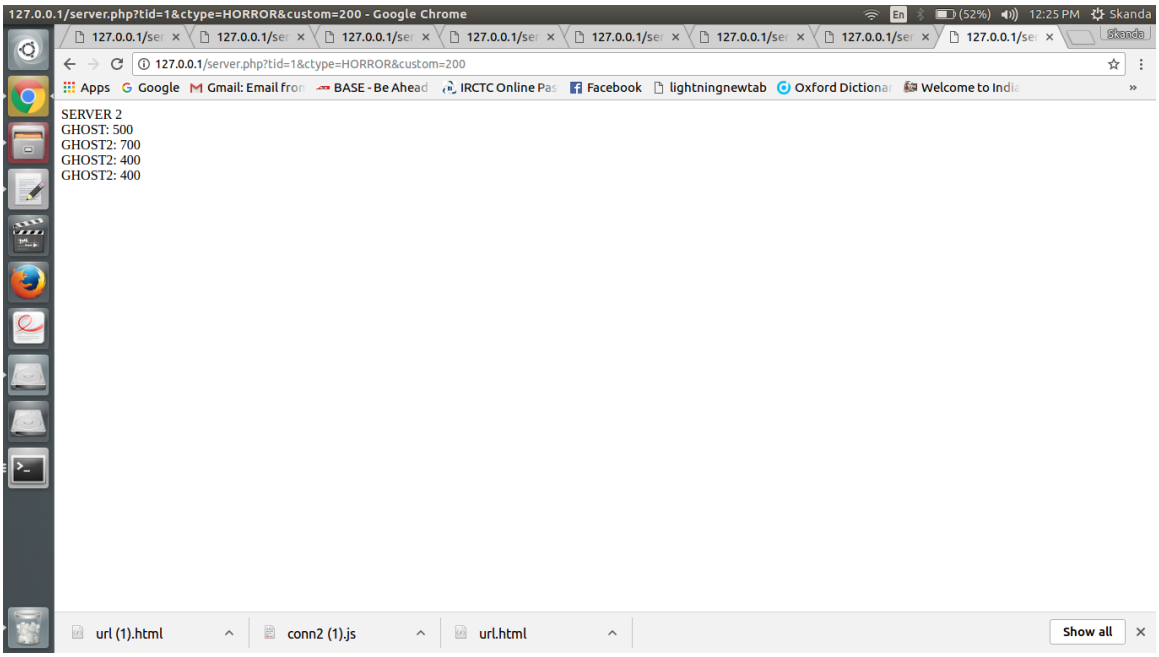
http://stackoverflow.com/questions/17666249/how-to-import-an-sql-file-using-the-command-line-in-mysql

http://www.codediesel.com/nodejs/querying-mysql-with-node-js/

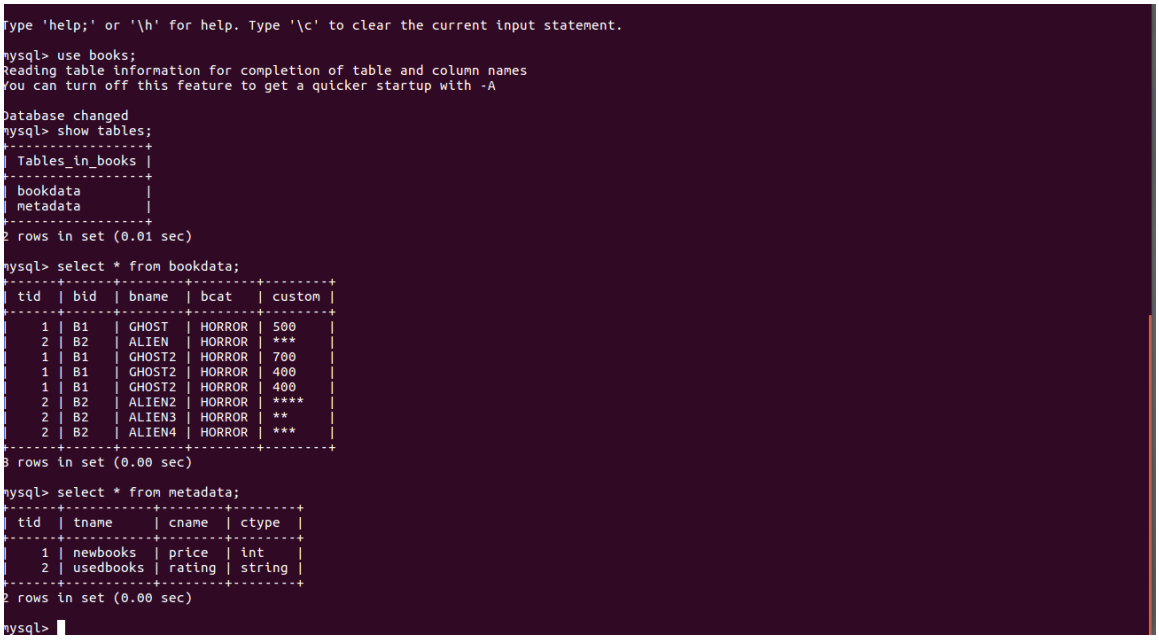
https://askubuntu.com/questions/720784/how-to-install-latest-node-inside-a-docker-container

http://stackoverflow.com/questions/19335444/how-do-i-assign-a-port-mapping-to-an-existing-docker-container

SCREENSHOTS




```
var http = require("http");


http.createServer(function (request, response)
{

        response.writeHead(200, {'Content-Type': 'text/plain'});

        var arr = request.url.split("/");
        var query='';
        var temp='';

        if(arr.length==3)       //custom field is not present
        {
                query='SELECT bname FROM bookdata WHERE tid='+arr[1]+' AND bcat=\''+arr[2]+'\';';

                r(
                {
                        uri: "http://10.0.3.42:3001/"+query,
                        method: "GET",
                        timeout: 10000,
                        followRedirect: true,
                        maxRedirects: 1
cloud2@u2:~$ nodejs server.js
 Server 2 Listening
^C
cloud2@u2:~$ nodejs server.js
 Server 2 Listening
```



EVALUATIONS (Leave this for the faculty)

Date	Evaluator	Comments	Score

CHECKLIST

SNo	Item	Status
	Source code documented	
2	Source code uploaded to CCBD server	
3	Recorded video of demo	
4	Instructions for building and running the code. Your code must be usable out of the box.	
5	Dataset used for project uploaded. Please include a description of the dataset format. This includes input file format.	