Deploying CouchDB Cluster

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This project focuses on deployment of CouchDB Cluster using Ansible playbook on Ubuntu Chameleon Cloud VMs and benchmarking of the deployment.

Keywords: CouchDB

Report: https://github.com/rrufael/sp17-i524/blob/master/project/S17-IO-3016/report/report.pdf
Code: https://github.com/rrufael/sp17-i524/tree/master/project/S17-IO-3016/code

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1. INTRODUCTION

CouchDB [1] is a no sql database management system under Apache. Data is stored as documents in CouchDB. In this project CouchDB cluster of one or more Chameleon cloud VMs is deployed using Ansible playbook and benchmarking is done to measure the time it took for deployement using Bash scripts.After installation of CouchDB cluster on Chameleon cloud VM, benchmarking test will be performed on measuring write and read time on CouchDB database. The dataset which is going to be used for write and read on CouchDB is the wine review dataset [2].

2. EXECUTION PLAN

This section depicts week by week execution plan for the project. My plan is to finish the project in six weeks. To accomplish this I need Chameleon cloud allocation for six weeks. I plan on using 10 node hours per week. The anticipated node hours I will need to complete the project is 60 node hours on Chameleon cloud.

2.1. Week 1

I was able to develop an initial Ansible script that will deploy CouchDB on Ubuntu 16.04 VM , upon successul installation the script will start CouchDB and then it will stop CouchDB on the remote VM. I booted Chameleon VM using Cloudmesh and then run Ansible playbook from my local machine. The tasks in my playbook run successfully.

2.2. Week 2

Run Ansible playbook to deploy CouchDB on Chameleon Cloud VM. Benchmark time it takes to deploy CouchDB on Chameleon Cloud VM

2.3. Week 3

Extend the Ansible script developed in Week 1 to deploy CouchDB into two Chameleon Cloud VMs.

2.4. Week 4

Run Ansible playbook to deploy CouchDB on two Chameleon Cloud VMs. Benchmark time it takes to deploy CouchDB on Chameleon Cloud VMs.

2.5. Week 5

Analysis of the benchmark results for deployment of CouchDB cluster. Document results in report and finalize report.

2.6. Week 6

Load the wine review dataset into CouchDB database, benchmark write time and read time.

3. TECHNOLOGIES USED

- Ansible
- Cloudmesh
- Other technologies TBD

4. DEPLOYMENT

TBD

5. BENCHMARK RESULTS

TBD

6. CONCLUSION

TBD

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[2] Kaggle Inc, "Wine Reviews | Kaggle," Web Page, Feb. 2018, accessed: 2018-02-28. [Online]. Available: https://www.kaggle.com/zynicide/wine-reviews