

NoSQL Basics & Fundamentals | Date – 12/02/2021

Spring AU 2021 – February (Batch – 2)

Name – Abhinav Sharma

Email – abhinav.sharma@accolitedigital.com

1: Import `beer-sample` bucket

The screenshot shows the 'AU Session > Buckets' interface in a web browser. The 'beer-sample' bucket is selected, and its configuration is displayed. The bucket is of type 'Couchbase' and has a RAM quota of 200MB. The cluster RAM quota is 3.63GB. The bucket has 1 server node and 1 replica. The ejection method is 'Value-Only' and the conflict resolution is 'Sequence Number'. The compaction is 'Not active' and the compression is 'Passive'. The storage backend is 'CouchStore'.

name	items	resident	ops/sec	RAM used/quota	disk used
beer-sample	0	100%	0	0B / 200MB	167KB
travel-sample	63,184	100%	0	63.9MB / 200MB	70.2MB

The interface also includes a sidebar with navigation options: Dashboard, Servers, Buckets, Backup, XDCR, Security, Settings, Logs, Documents, Query, Indexes, Search, Analytics, Eventing, and Views. The 'beer-sample' bucket details are shown on the right, including a 'Memory' section with a bar chart showing the bucket's usage relative to the cluster quota, and a 'Disk' section with a bar chart showing the bucket's usage relative to the total cluster storage.

2: Write a join query to fetch the Top 10 brewery(type="beer") and their country(type="brewery") which produces more varieties of beers.

The screenshot shows the AU Session > Query interface. The Query Editor contains the following SQL query:

```

1 SELECT b1.name AS beer_name,
2       b2.country AS country
3 FROM 'beer-sample' b1
4 JOIN 'beer-sample' b2 ON KEYS b1.brewery_id
5 WHERE b1.type = 'beer'
6 AND b2.type = 'brewery'
7 LIMIT 10;

```

The query was executed successfully. The Query Results table shows the following data:

beer_name	country
21A IPA	United States
563 Stout	United States
Amendment Pale Ale	United States
Bitter American	United States
Double Trouble IPA	United States
General Pippo's Porter	United States
North Star Red	United States
Oyster Point Oyster Stout	United States
Potrero ESB	United States
South Park Blonde	United States

The Data Insights panel on the right shows two collections: 'beer-sample' (1 collection) and 'travel-sample' (6 collections).

3: Write a mapreduce to get the number of breweries based on country. Please attach the mapreduce code and json output screenshot.

The screenshot shows the AU Session > Views interface. A dialog box titled 'Add Development View' is open, prompting for the following information:

- Design Document Name:** _design/dev_ reduce_trial
- View Name:** Map Reduce Trail

The dialog box has 'Cancel' and 'Save' buttons.

Google Chrome - Fri Feb 19 1:14 AM

localhost:8091/ui/index.html#/views_design-2fdev_reduce_trial?scenarioBucket=beer-sample&scenarioZoom=minute&bucket=beer-sample&type=development&viewid=Map%20Reduce%20Trail&pageNum...

Apps LocalHost Gmail GitHub LinkedIn AngelList LeetCode GeeksforGeeks WhatsApp My Drive - Goo... SAU/21 Feb Ba... Accolite Mail Accolite Googl... Medium Carbon | Creat...

BETA - PREVIEW MODE - UNSUPPORTED - NOT FOR USE IN PRODUCTION

AU Session > Views > Views Editing

Sample Document: magic_hat-feast_of_fools

Dashboard Servers Buckets Backup XDCR Security Settings Logs Documents Query Indexes Search Analytics Eventing Views

View Index Code

Map

```
1 function(doc, meta) {
2   if(doc.type == "brewery"){
3     emit([doc.country, doc.type], null);
4   }
5 }
```

Reduce (built in: _count, _sum, _stats)

```
1 _count
```

Make Copy Save Changes

Results filter: ?limit=6&state=false&connection_timeout=60000&inclusive_end=true&skip=0&full_set=&group=true

Development Time Subset Full Cluster Data Set

Key	Value
["", "brewery"] undefined	1
["Argentina", "brewery"] undefined	2
["Aruba", "brewery"] undefined	1
["Australia", "brewery"] undefined	14

Google Chrome - Fri Feb 19 2:09 AM

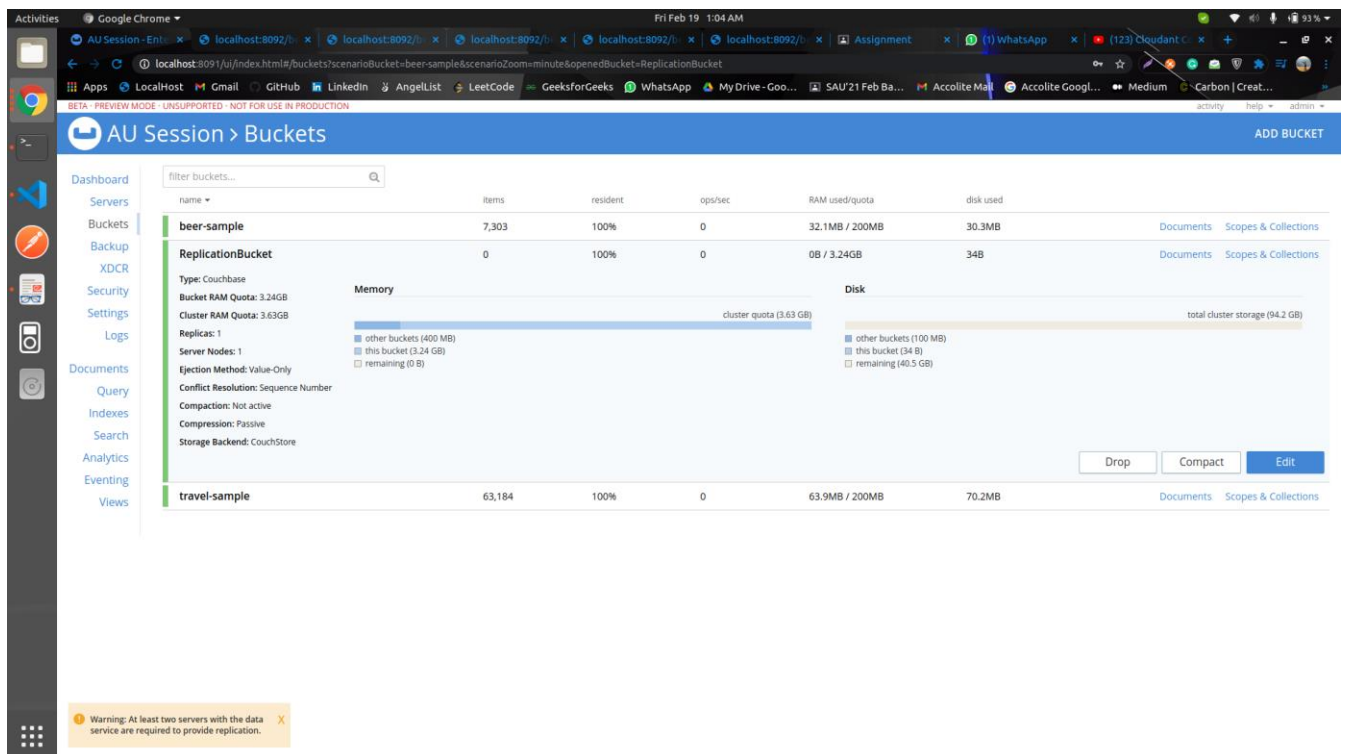
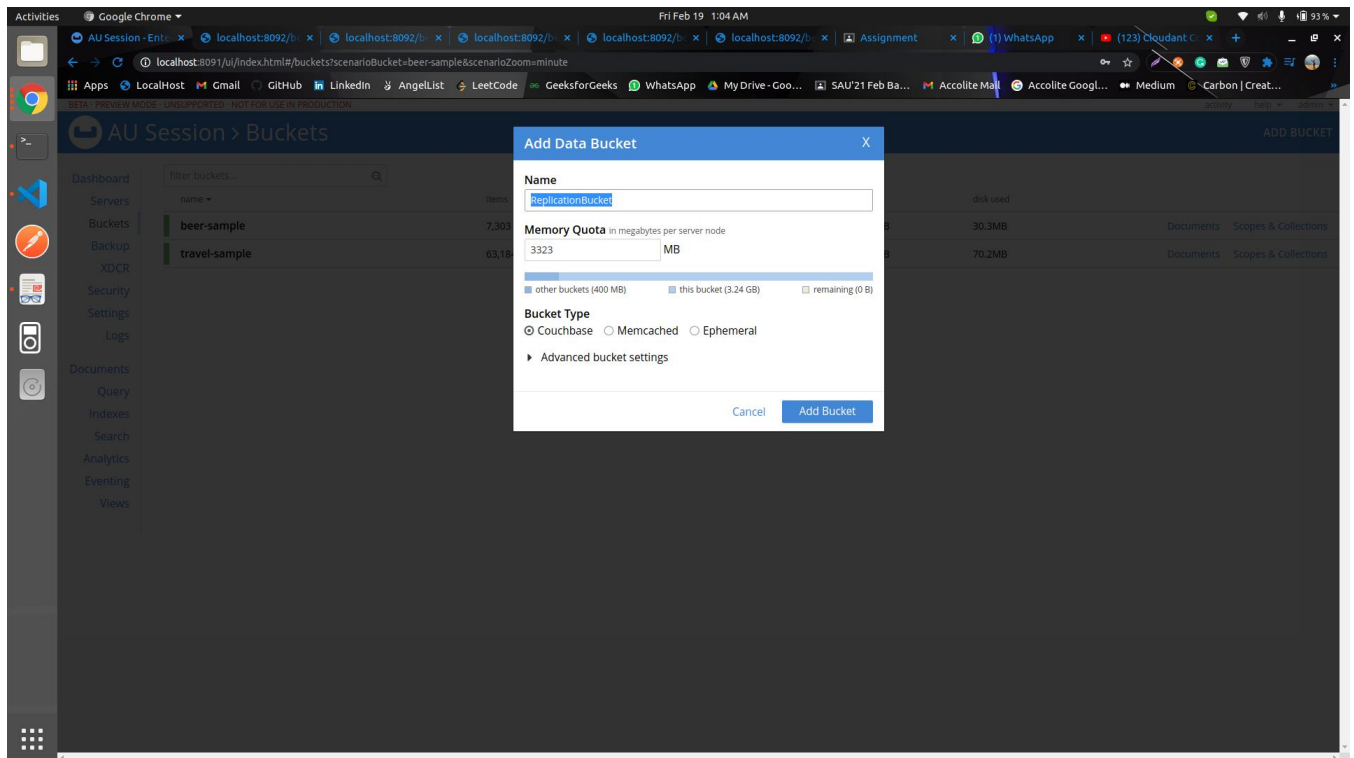
localhost:8092/beer-sample/_design/dev_reduce_trial/view/Map%20Reduce%20Trail?limit=6&state=false&connection_timeout=60000&inclusive_end=true&skip=0&full_set=&group=true

Apps LocalHost Gmail GitHub LinkedIn AngelList LeetCode GeeksforGeeks WhatsApp My Drive - Goo... SAU/21 Feb Ba... Accolite Mail Accolite Googl... Medium Carbon | Creat...

```
{
  "rows": [
    {
      "key": ["", "brewery"],
      "value": 1
    },
    {
      "key": ["Argentina", "brewery"],
      "value": 2
    },
    {
      "key": ["Aruba", "brewery"],
      "value": 1
    },
    {
      "key": ["Australia", "brewery"],
      "value": 14
    },
    {
      "key": ["Austria", "brewery"],
      "value": 10
    },
    {
      "key": ["Belgium", "brewery"],
      "value": 99
    }
  ]
}
```

4. XDCR:

a) Add a new bucket "Brewery".



b) Create a XDCR with a filter(`type='brewery'`) to replicate only the brewery entity from `beer-sample` bucket.

AU Session > XDCR Add Replication

Replicate From Bucket: beer-sample

Remote Cluster: AuSession

Remote Bucket: ReplicationBucket

The bucket beer-sample will be replicated to AuSession. Missing targets on the remote will be ignored and that data will not be replicated.

Specify scopes, collections, and mapping

Migrate collections

Filter replication

Filter Expression: REGEXP_CONTAINS(type, "brewery")

Id of document to test...

Test Filter

Deletion Filters

- ☐ Do not replicate document expirations
- ☐ Do not replicate DELETE operations
- ☐ Remove TTL from replicated items

Advanced Settings

Warning: At least two servers with the data service are required to provide replication.

Save Replication Cancel/Reset

AU Session > Buckets

name	items	resident	ops/sec	RAM used/quota	disk used
beer-sample	7,303	100%	0	34.3MB / 200MB	39.1MB
ReplicationBucket	1,412	100%	0	23MB / 3.24GB	7.04MB
travel-sample	63,184	100%	0	63.9MB / 200MB	70.2MB

filter buckets...

Documents Scopes & Collections

Type: Couchbase

Bucket RAM Quota: 3.24GB

Cluster RAM Quota: 3.63GB

Replicas: 1

Server Nodes: 1

Ejection Method: Value-Only

Conflict Resolution: Sequence Number

Compaction: Not active

Compression: Passive

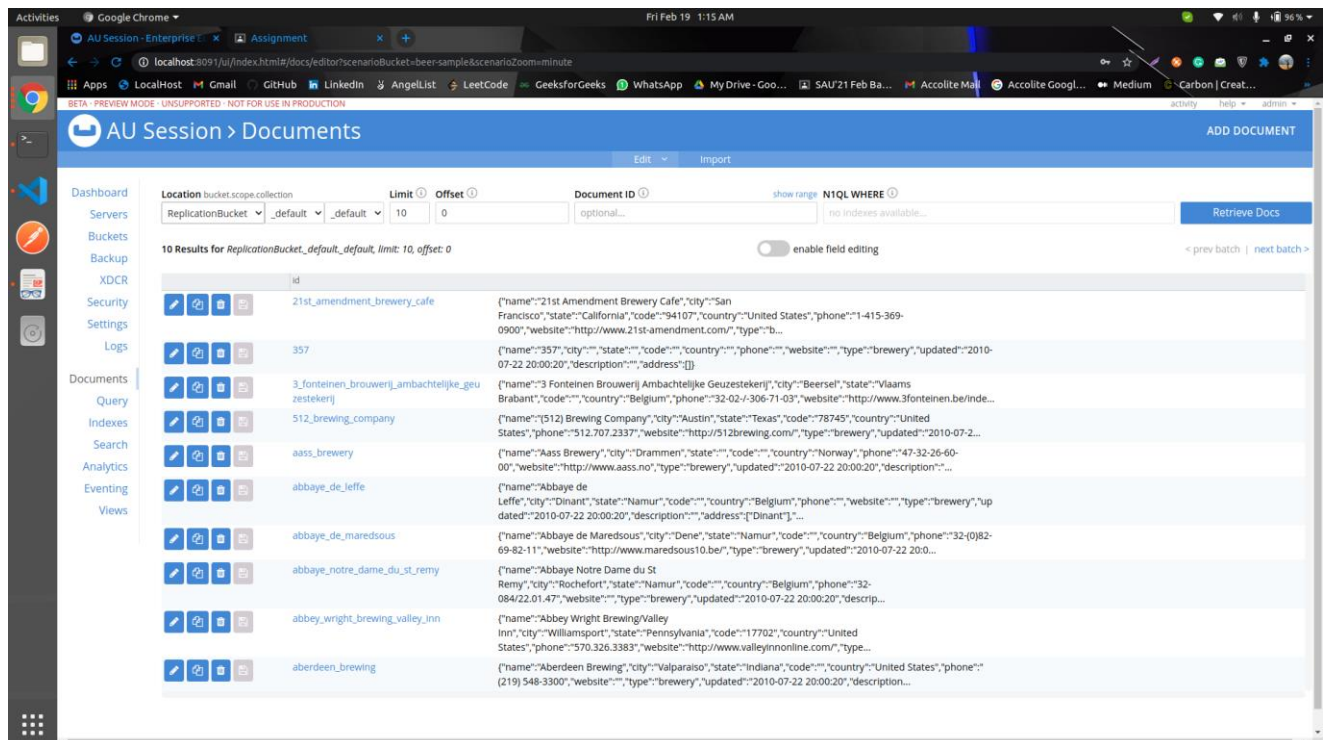
Storage Backend: CouchStore

Drop Compact Edit

Created a new replica cluster named “AuSession”, and started replication from `beer-sample` bucket to “ReplicationBucket” as Remote Bucket using “AuSession” as Remote Cluster.

Filter Expression used = REGEXP_CONTAINS(type, “brewery”)

This replicates entities in ReplicationBucket bucket from beer-sample bucket, only the one's which have type = brewery.



5) CLI:

a) Add a new bucket "Beer".

The screenshot shows the Couchbase AU Session Buckets interface. The 'Buckets' tab is selected, displaying a table of buckets. A terminal window is open in the foreground, showing the command to create a bucket named 'Beer'.

name	Items	resident	ops/sec	RAM used/quota	disk used	Documents	Scopes & Collections
Beer	0	100%	0	22.9MB / 200MB	1.1MB		
beer-sample	7,303	100%	0	34.3MB / 200MB	39.1MB		
ReplicationBucket	1,412	100%	0	23MB / 3.24GB	7.04MB		

```

abhi@hydra: /opt/couchbase/bin
abhi@hydra: /opt/couchbase/bin
abhi@hydra: /opt/couchbase/bin$ ./couchbase-cli bucket-create -c couchbase://127.0.0.1 --username admin --password AbhiHydra629@ --bucket Beer --bucket-type couchbase --bucket-ramsize 200
success: bucket created
abhi@hydra: /opt/couchbase/bin$
  
```

Warning: At least two servers with the data service are required to provide replication.

b) Using CLI - do a cbexport of the entire `beer-sample`

The screenshot shows a terminal window with the command to export data from the 'beer-sample' bucket using the 'cbexport' command.

```

abhi@hydra: /opt/couchbase/bin
abhi@hydra: /opt/couchbase/bin$ ./cbexport json -c couchbase://127.0.0.1 -u admin -p AbhiHydra629@ -b beer-sample -o /home/abhi/beer-sample.json -f lines -t 4350N exported to /home/abhi/beer-sample.json successfully
Documents exported: 7303 Documents skipped: 0
abhi@hydra: /opt/couchbase/bin$
  
```

c) And do a cbimport with "brewery id" as primary key. As a result, in the new bucket - only

[illegible]

Beer bucket after cbimport (contains 1329 documents)