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WORKSHOP

DISCOVER NOSQL WITH COUCHBASE

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33rd Degree Conference
Conference for Java Masters | 13-15 March 2013
Warsaw, Poland

INSTALL COUCHBASE

Install Couchbase Server 2.0

Ubuntu

RedHat

Mac OS X

Windows

or build from sources

Download for your Platform

Follow Install Instructions for your OS

(1) Setup Couchbase

Browse to Couchbase Admin Panel
http://localhost:8091/
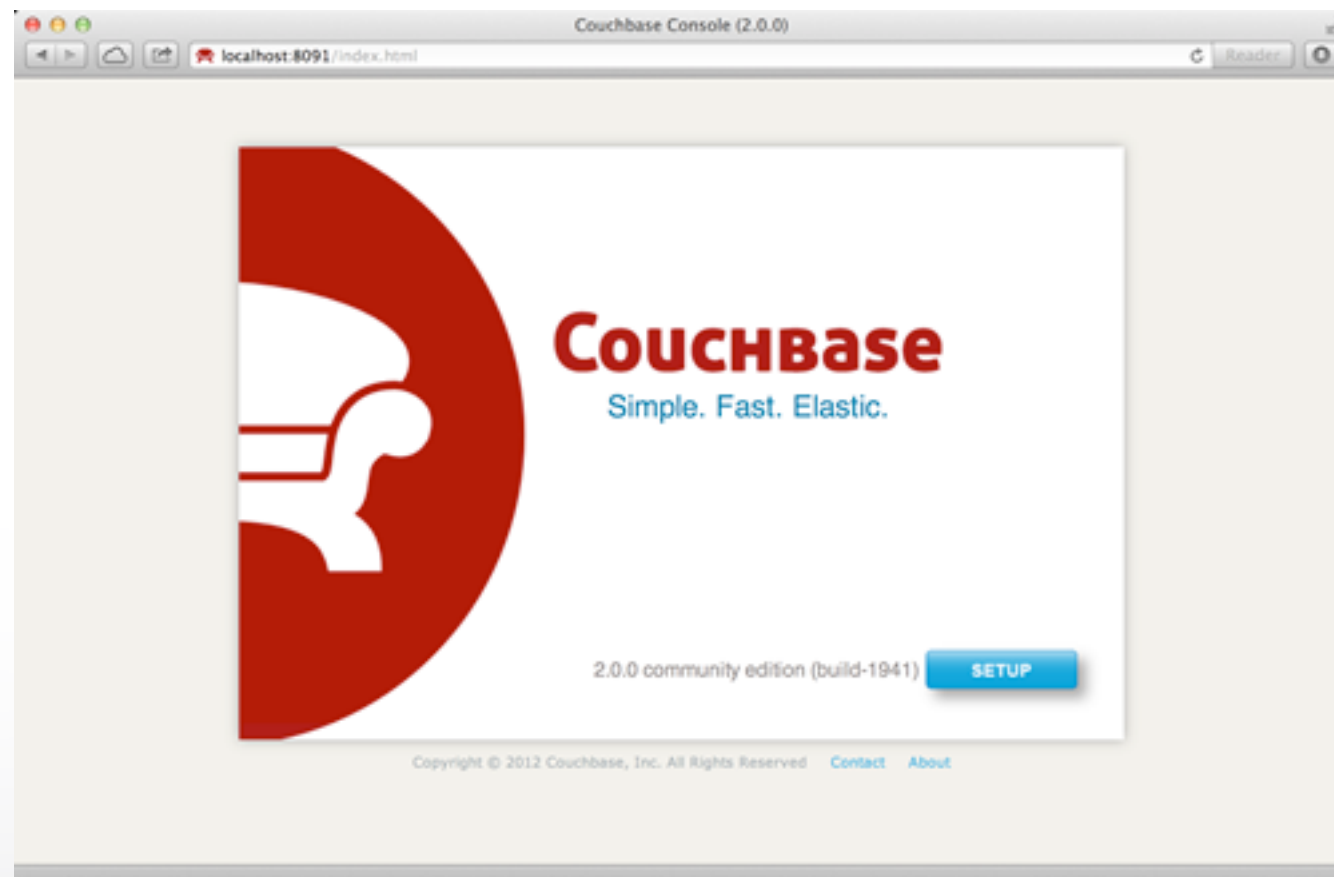
(if you didn't install on local machine, substitute IP address for localhost)

COUCHBASE

(2) Setup Couchbase - RAM Quota

RAM <u>Quota</u> is the Memory Cap for
each* Couchbase Server *in the Cluster

Portions of this quota are allocated to each Bucket (Database) that you setup, you are setting the *maximum* memory to allocate in this step.

Even on laptops, it's typical to set this fairly high, it won't all get used unless you have that much *data* in memory... Recommended to use at least 1024 MB!
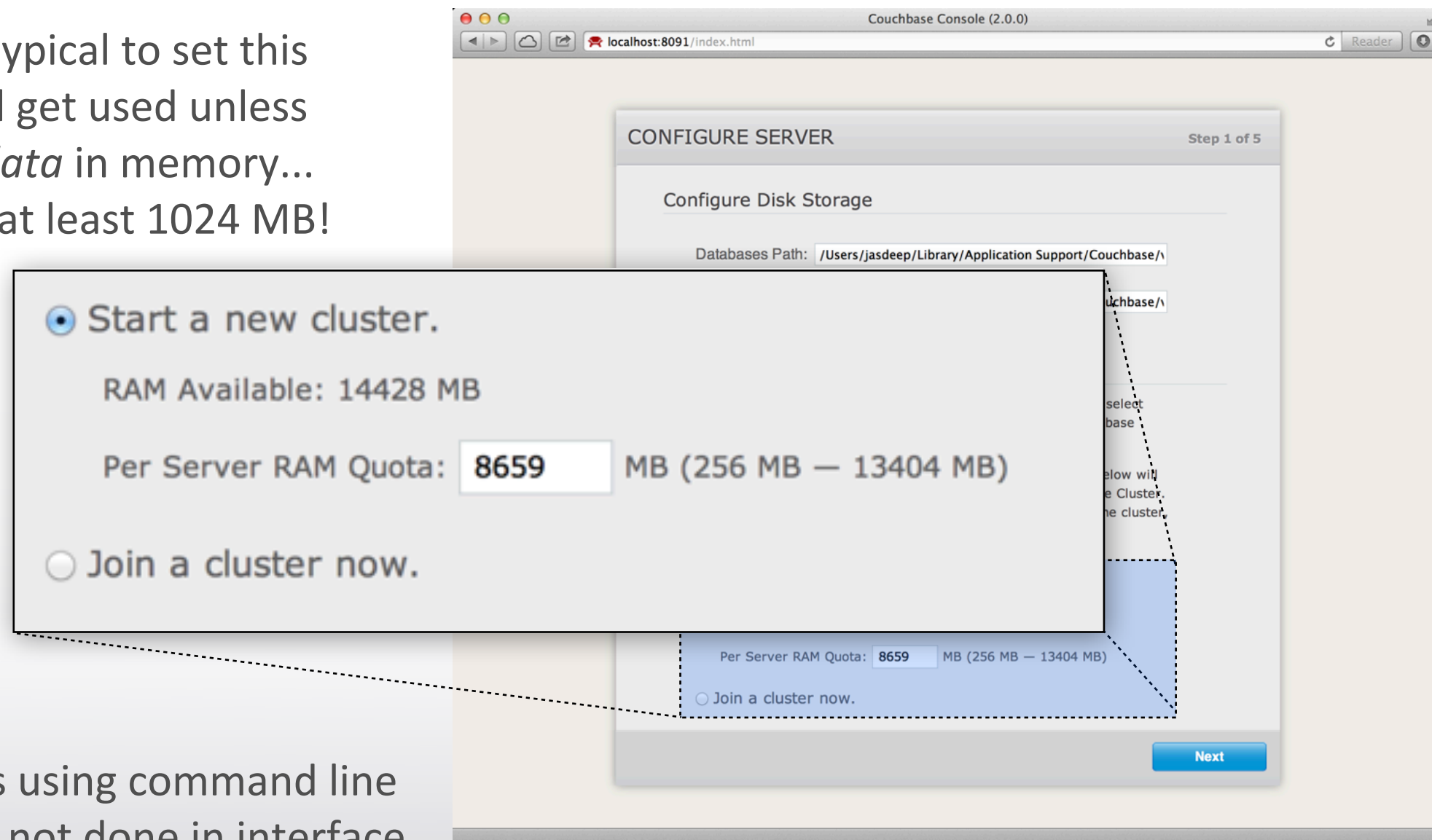
FYI: Changing this requires using command line and couchbase restart, it's not done in interface

Couchbase

(3) Setup Couchbase - Samples

Optionally Setup some Sample Data with Example Views (Map/Reduce Indexes)

This can also be done at a later time after things are setup...

(4) Setup Couchbase - Default Bucket

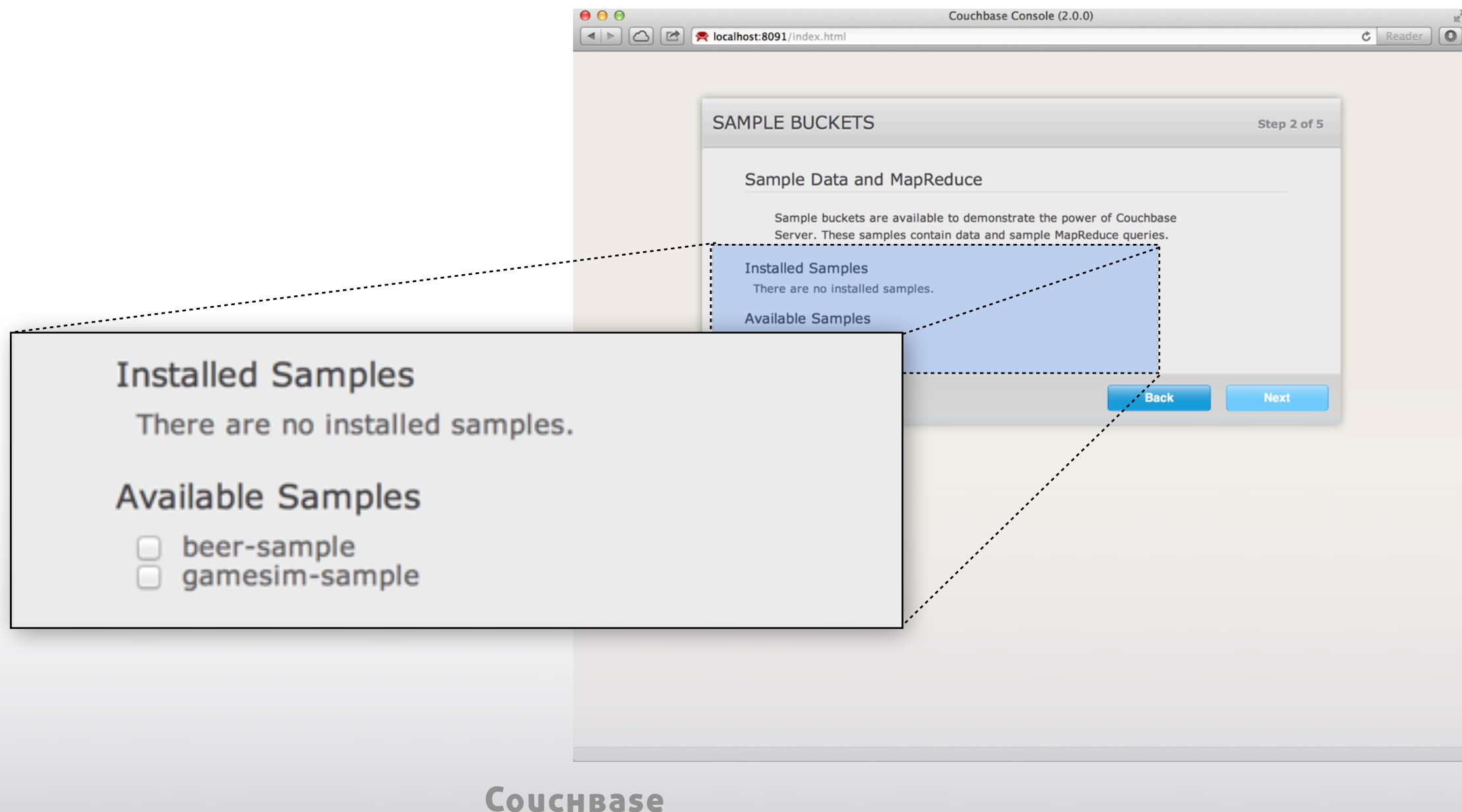## Setup RAM and Settings for Default Bucket
(percentage of server RAM Quota in first step)

You'll likely setup more than one Bucket while playing & testing, so don't use all your Quota here, 300MB is a good size, this is *easily changed* later in Web Admin.

Since you have a single node cluster locally, there won't be any replicas even if enabled

Allows you to delete all data in Bucket in one command, good for testing

(5) Setup Couchbase - Notifications

If you want notifications of software updates, check this box and put in your info
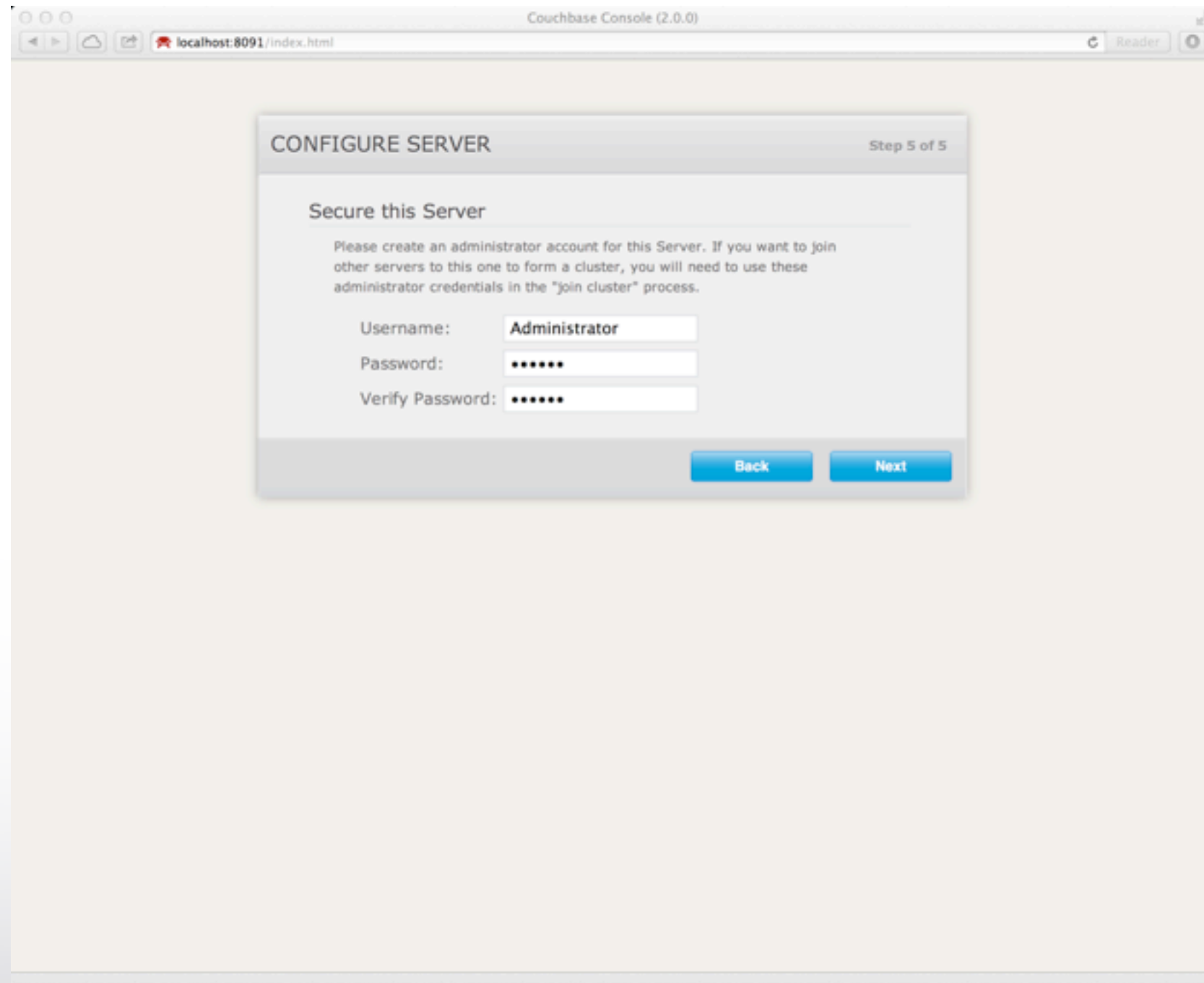
(6) Setup Couchbase - Admin U/P

**Set your Username/Password
to the Web Admin Console**

Congrats!

You're now level 2.

Windows Issues / Window 8

Alert ✕

[10:02:09] - IP address seems to have changed. Unable to listen on 'ns_1@10.0.2.15'.

OK
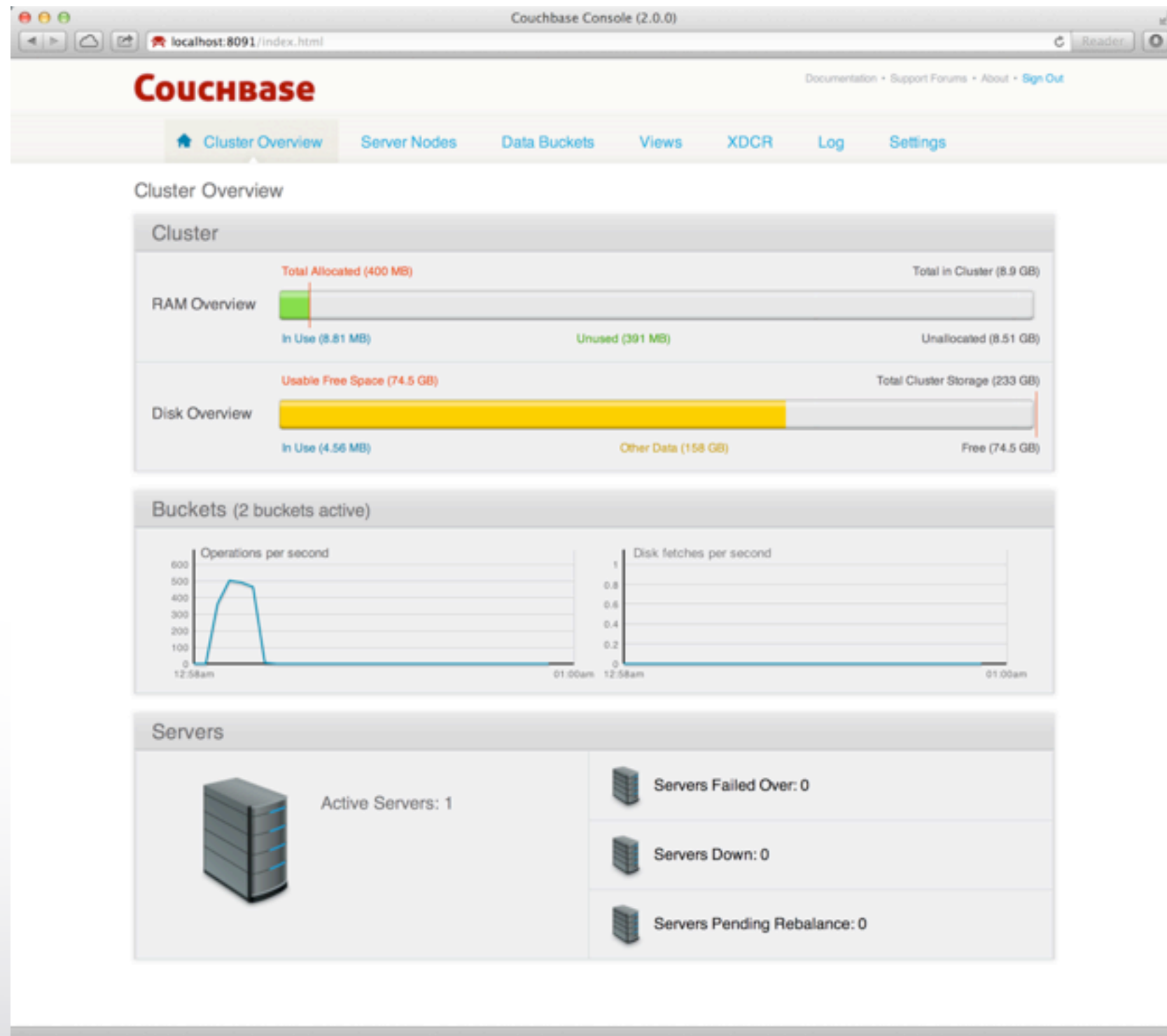
or... if server does not start

Windows IP Issue	http://tinyurl.com/cbipaddress
Windows 8 Install	http://tinyurl.com/cbwindows8

FYI: This issue will be fixed in the 2.0.1 release.

Couchbase

WEB ADMIN UI TOUR

Using the Web Console

- In the "Default" bucket :

  – Allocate 100Mb of RAM to it

  – Manually Insert a document with the following information

    - ID : emp:001

    - firstName : john

    - lastname : doe

    - email : john.doe@33degre.sample.com

COUCHBASE AND JAVA

Official SDKs

Ruby

Microsoft® .NET

C PROGRAMMING
libcouchbase

php

Python

node js

JRUBY

play!

Java

Scala

Clojure
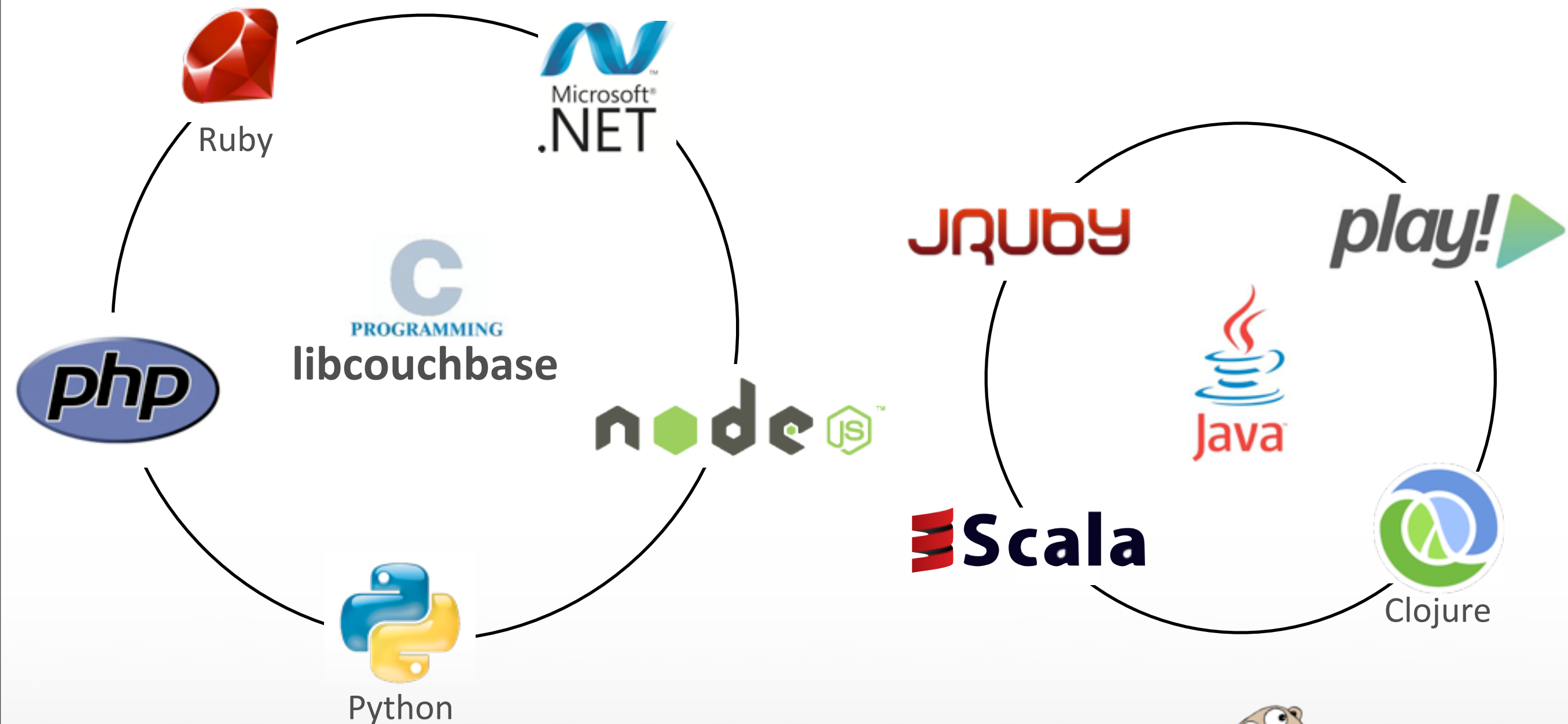
www.couchbase.com/develop

Go

Couchbase

Simple Code

- Checkout : https://github.com/couchbaselabs/DeveloperDay

- Connect to Couchbase

  - see Ex01Connect.java

  - check the Maven dependencies

- Insert/Get Data into Couchbase

  - See Ex02Storage.java

  - See Ex03StorageJson

- Create a new class to insert Employees using JSON

COUCHBASE

VIEWS

Delete Production Design Documents in "beer-sample"

Delete Development Design Documents in "beer-sample" (if they exist)

Create Views in Beer Sample

- Using the Admin Console:

  - Create a view that lists all beers by name

  - Create a view that lists all breweries by name

- From the console, print the list of beer with a name starting by "Q"

- Do the same from Java (or any other language)

  - You can look at : Ex09View

Couchbase

Solutions

dev_beer/by_name

```
function (doc, meta) {
  if(doc.type && doc.type == "beer") {
    emit(doc.name, null);
  }
}
```

dev_brewery/by_name

```
function (doc, meta) {
  if(doc.type && doc.type == "brewery") {
    emit(doc.name, null);
  }
}
```

Couchbase

Solution

- Print the list of beer, starting by Q

`?startkey=%22Q%22&endkey=%22Q\uefff%22`

Calling from Java

```java
View view = client.getView("beer", "by_name");
Query query = new Query();

query.setIncludeDocs(true)
  .setLimit(20)
  .setRangeStart(ComplexKey.of("Q"))
  .setRangeEnd(ComplexKey.of("Q" + "\uefff"));
System.out.println(query);
ViewResponse result = client.query(view, query);

ArrayList<HashMap<String, String>> beers =
  new ArrayList<HashMap<String, String>>();
for(ViewRow row : result) {
  HashMap<String, String> parsedDoc =
              gson.fromJson( (String)row.getDocument(), HashMap.class);
  System.out.println( parsedDoc );
}
```

Install the Beer Sample App

- Take a look at the

  `http://www.couchbase.com/docs/couchbase-sdk-java-1.1/tutorial.html`

- Install and Run the application

  - Look at the "ConnectionManager"

    - 1 single connection : Connection "pool" is managed by the SDK

  - Look at the "Search API"

COUCHBASE

More with Java & Views

- Create a program that use Couchbase to store "Serialized Java Classes"

    – Save an instance

    – Get the instance

- Play with the TTL, Increment/Decrement, ...

    – See Labs Ex05AtomicCounter, Ex06NonJsonOps

Some fun with views

p1	{ "first": "David", "last": "Simon" }
p2	{ "first": "David", "last": "Beckham" }
p3	{ "first": "Simon", "last": "Davis" }
p4	{ "first": "Trond", "last": "Norway" }
p5	{ "first": "Michael", "last": "Nitschinger" }

How can I :

- All people with first name equals to "David" ?

- All people with first name OR last name starts with "John" ?

- All people with first name equals "David" or "Simon"

- All people with first name equals "David" and last name equals "Simon"

Couchbase

More and Views

• Count the number of beers by brewery

• Count the number of breweries by country, state, city

• With Twitter

  – http://tugdualgrall.blogspot.com/2012/11/couchbase-create-large-dataset-using.html

  – Search by Screen Name

  – Count by Screen Name

  – First Tweet (by Date)

  – Number of Tweet by minutes, seconds, …

Couchbase