

Tugdual “tug” Grall

WORKSHOP

DISCOVER NOSQL WITH COUCHBASE



@tgrall

tug@couchbase.com

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Couchbase

INSTALL COUCHBASE

Couchbase

Install Couchbase Server 2.0



Ubuntu



RedHat



Mac OS X



Windows

or build from sources



Couchbase

Download for your Platform

www.couchbase.com/download


Follow Install Instructions for your OS

1 Couchbase Server Downloads
2.0.0 - latest


Enterprise Edition
Recommended for development and production


Community Edition
Courtesy builds for enthusiasts

Operating System

**64-bit Ubuntu**
32-bit Ubuntu
[Install Instructions](#)

64-bit Red Hat
32-bit Red Hat
[Install Instructions](#)

**64-bit Windows**
32-bit Windows
[Install Instructions](#)

**64-bit Mac OS X**
32-bit Mac OS X
[Install Instructions](#)

[Why Enterprise?](#)

2.0.0 Release | [\[md5\]](#)

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[Release Notes](#) | [Manual](#)

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N/A

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N/A

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N/A

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Download Sources Files:

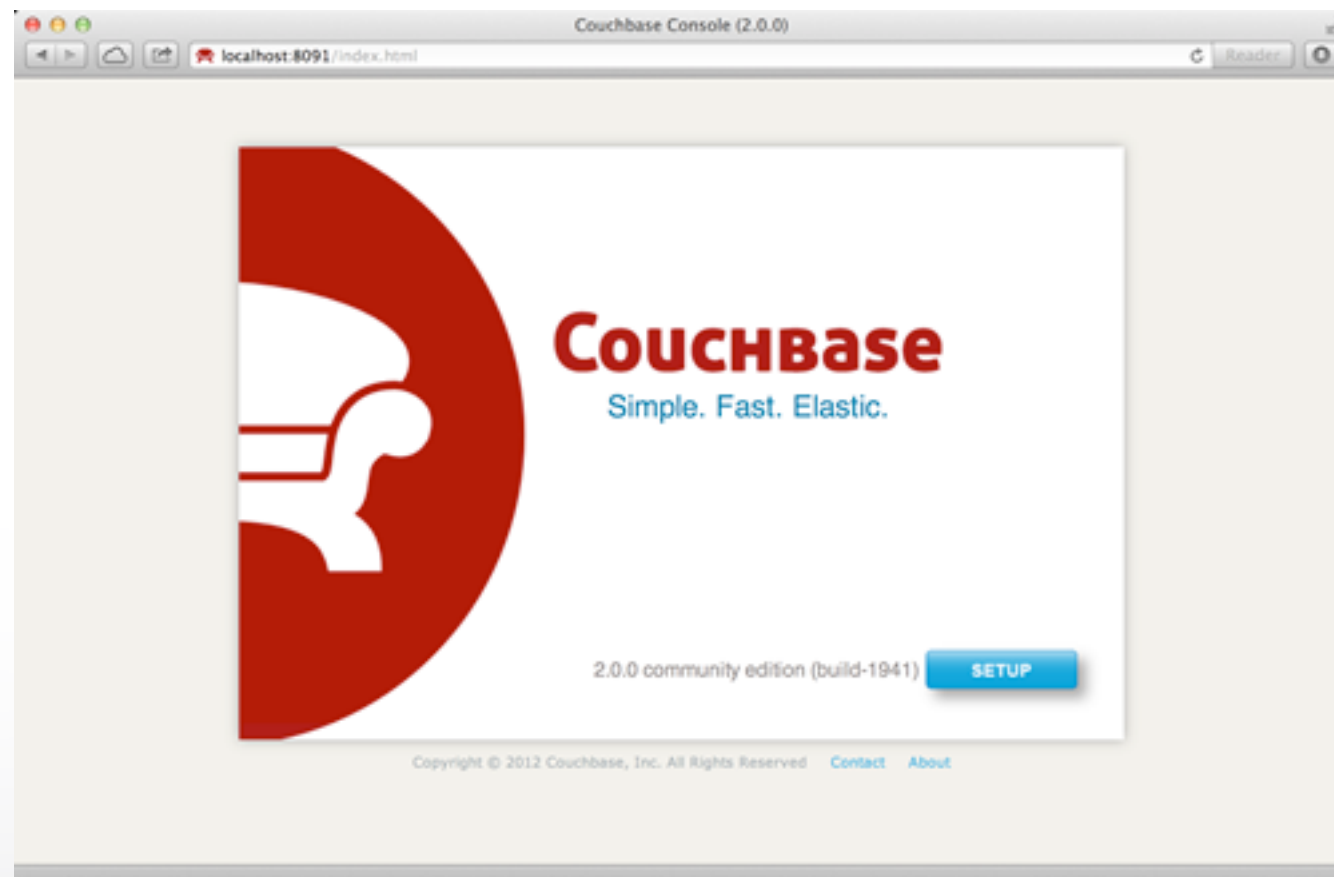
[couchbase-server_src-2.0.0.tar.gz](#)

Enterprise or Community. Which one is right for me?

(1) Setup Couchbase

Browse to Couchbase Admin Panel

<http://localhost:8091/>



(if you didn't install on local machine, substitute IP address for localhost)

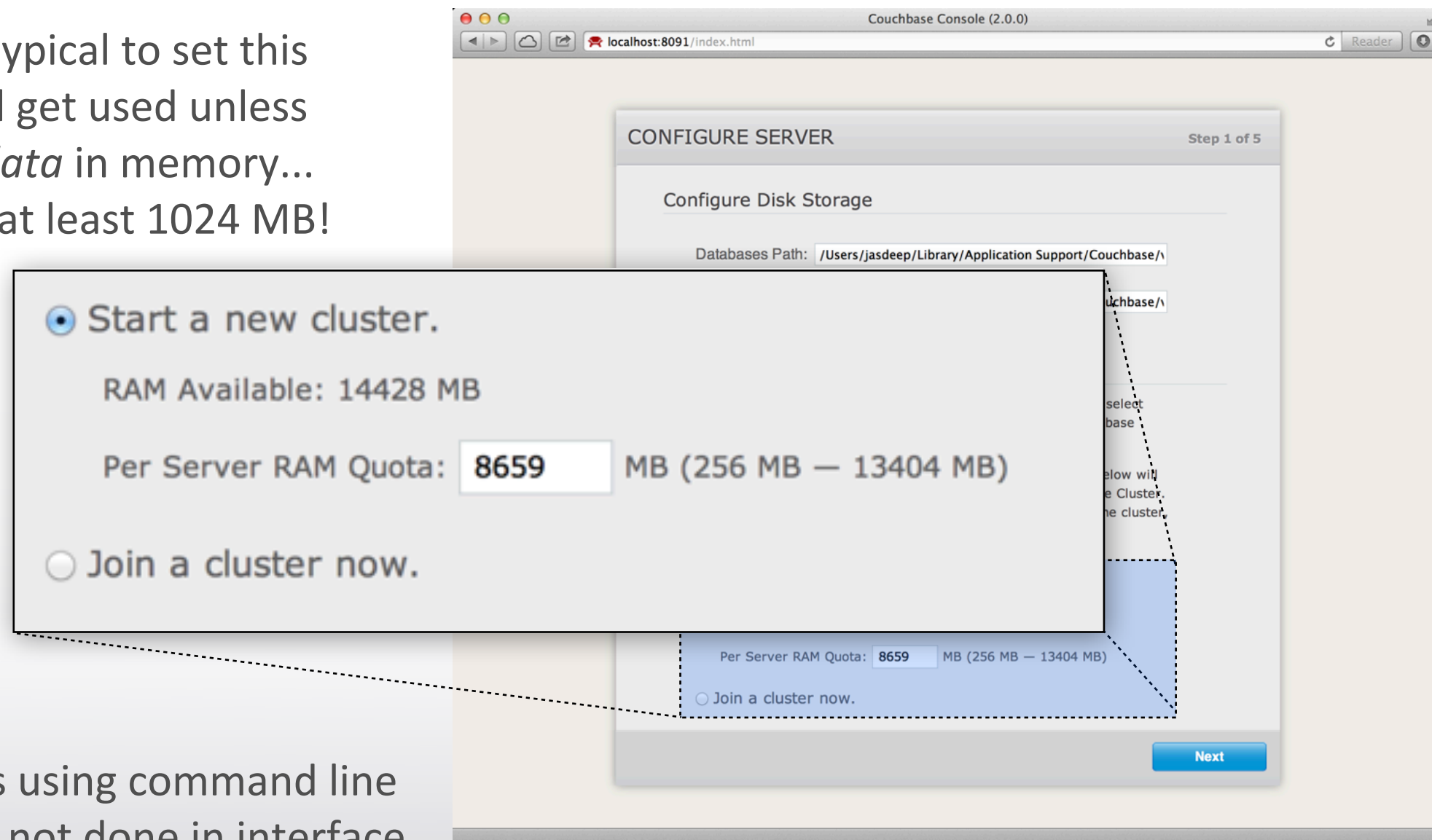
Couchbase

(2) Setup Couchbase - RAM Quota

**RAM Quota 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!



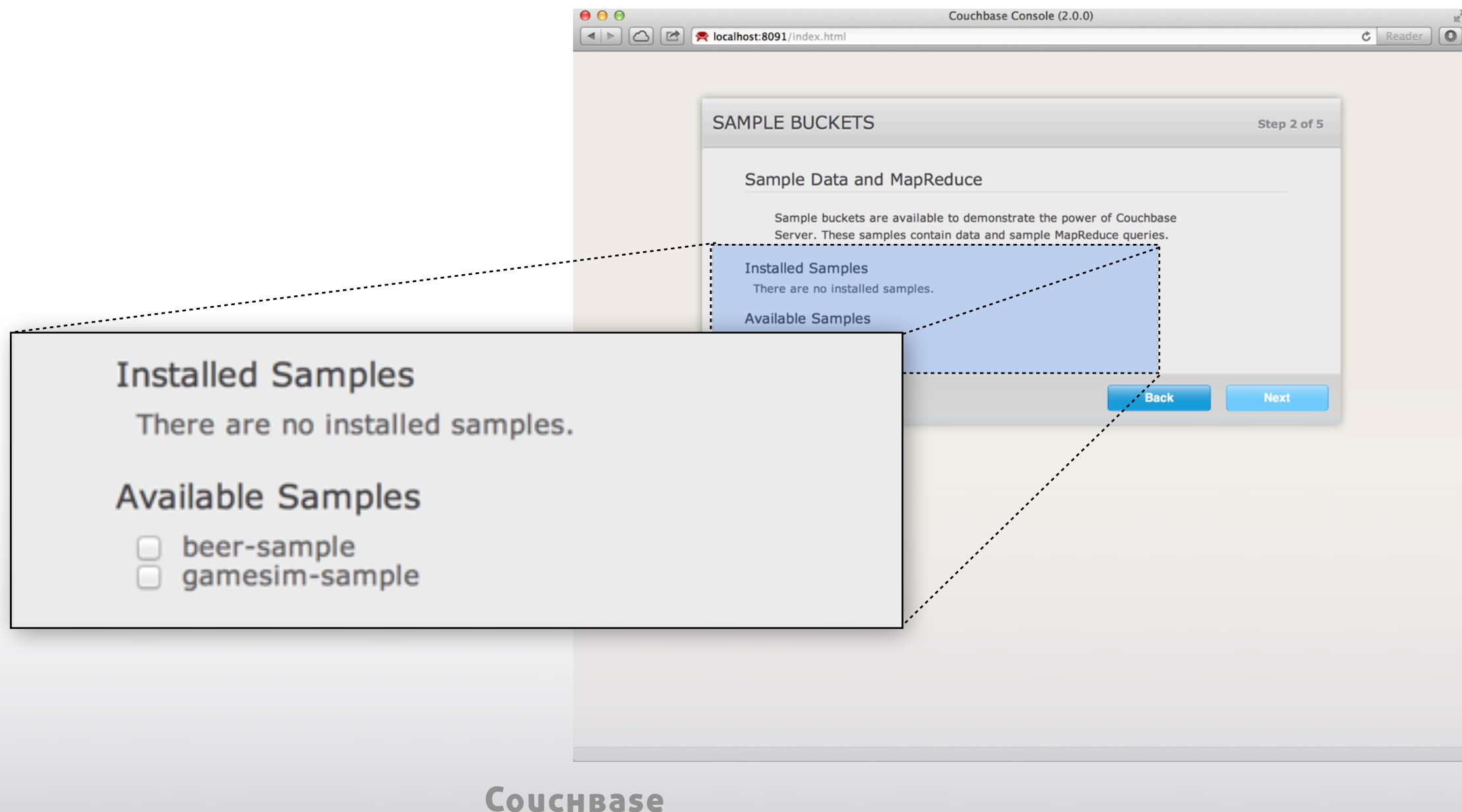
FYI: Changing this requires using command line and couchbase restart, it's not done in interface

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.

Memory Size

Per Node RAM Quota: MB

Cluster quota (2 GB)

Other Buckets (0 B) This Bucket (300 MB) Free (1.71 GB)

Total bucket size = 300 MB (300 MB x 1 node)

Replicas

☒ Enable Number of replica (backup) copies

☐ Index replicas

Flush

☐ Enable

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**

Couchbase Console (2.0.0)

localhost:8091/index.html

Reader

NOTIFICATIONS

Step 4 of 5

Update Notifications

☒ Enable software update notifications [What's this?](#)

Community Updates

Please provide your email address to join the community and receive news on coming events.

Email:

First name:

Last name:

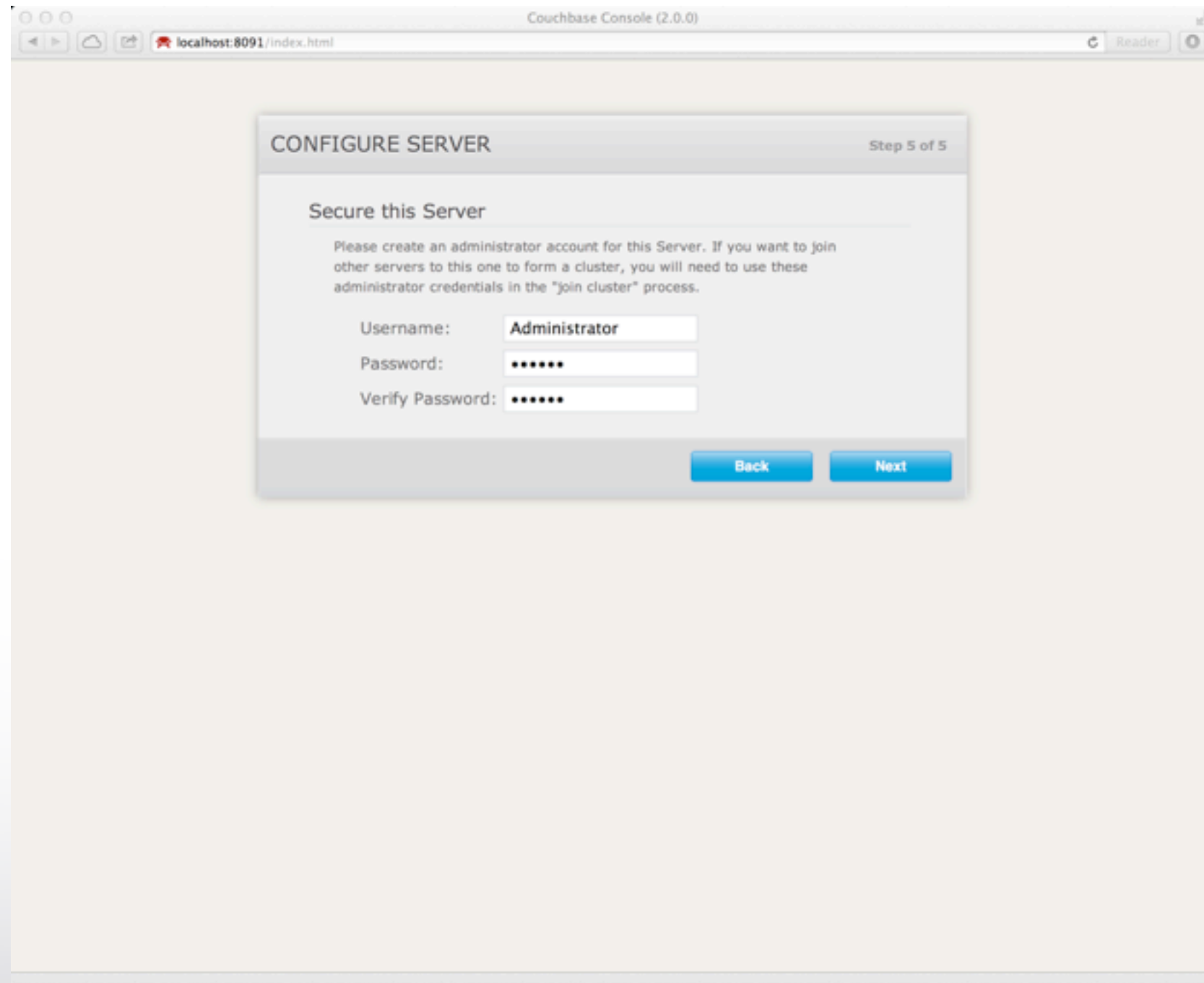
Company:

[Back](#) [Next](#)

Couchbase

(6) Setup Couchbase - Admin U/P

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



Couchbase Console (2.0.0)

localhost:8091/index.html

Reader

CONFIGURE SERVER Step 5 of 5

Secure this Server

Please create an administrator account for this Server. If you want to join other servers to this one to form a cluster, you will need to use these administrator credentials in the "join cluster" process.

Username:

Password:

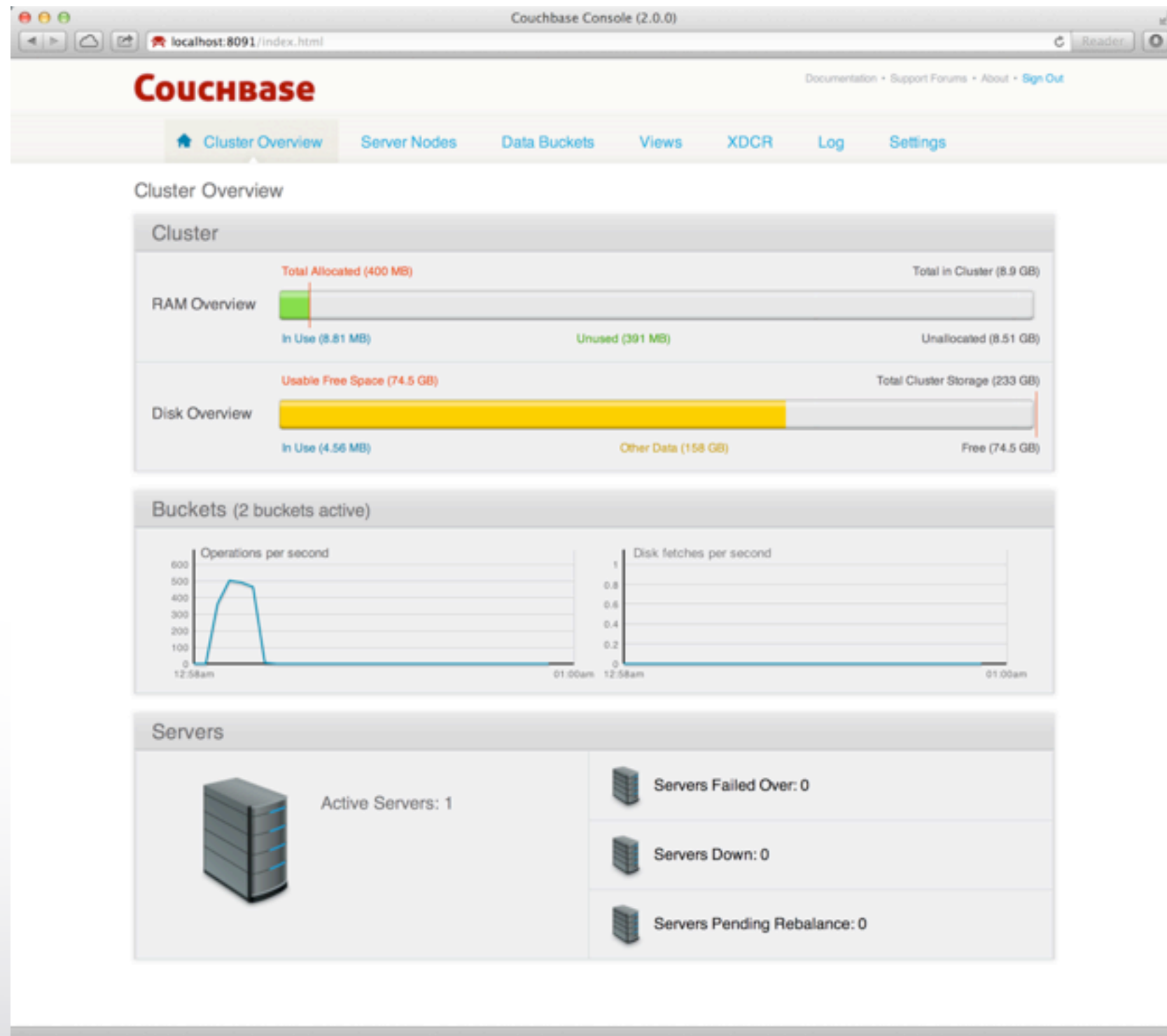
Verify Password:

[Back](#) [Next](#)

Couchbase

Congrats!

You're now level 2.



Couchbase

Windows Issues / Window 8



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



Couchbase

WEB ADMIN UI TOUR

Couchbase

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

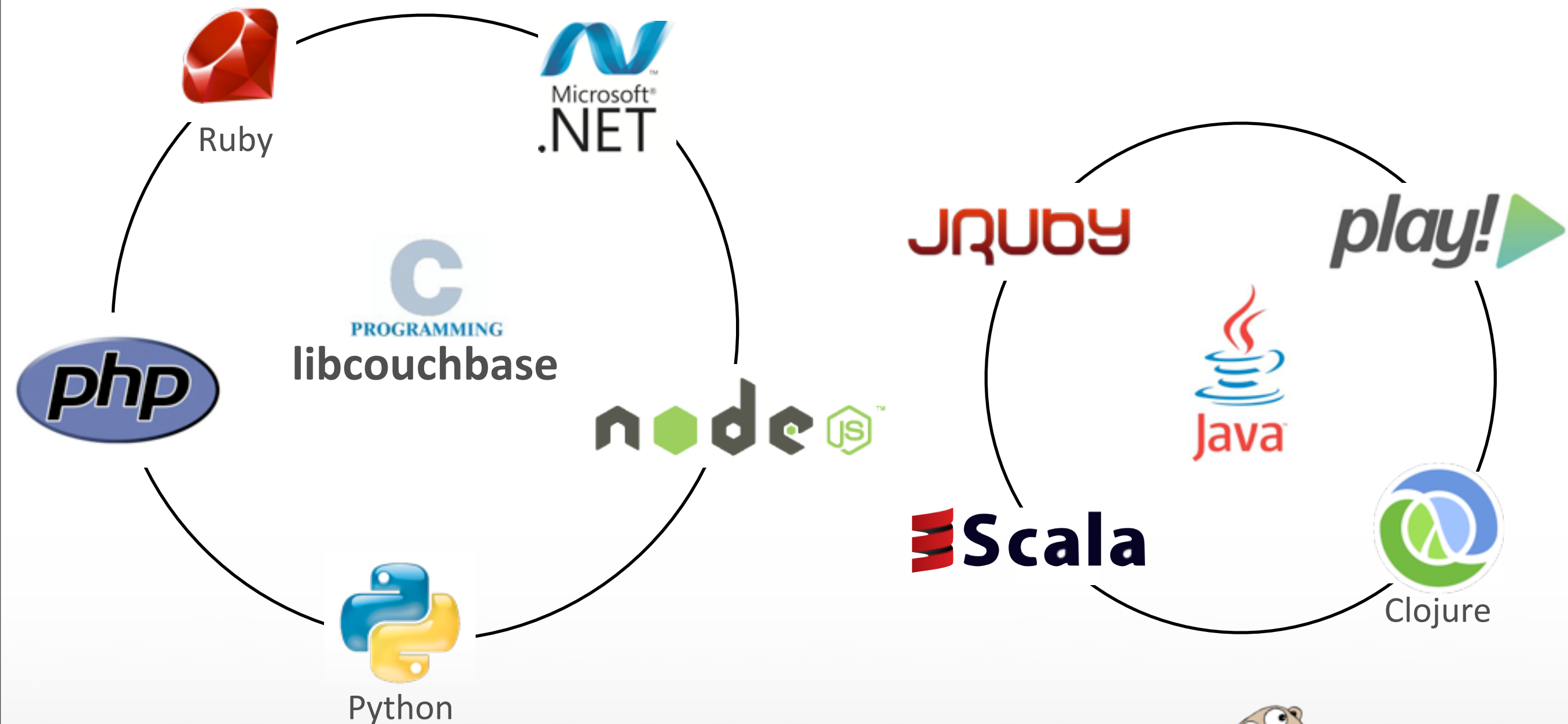


Couchbase

COUCHBASE AND JAVA

Couchbase

Official SDKs



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**



Couchbase

VIEWS

Couchbase

Delete Production Design Documents in "beer-sample"

Couchbase Console (2.0.0)

localhost:8091/index.html#sec=views&spatialFilter=bbox%3D-180%2C-90%2C180%2C90%26connection_timeout%3D60000&viewsFilter=connection_tim Reader

Documentation • Support Forums • About • Sign Out

Cluster Overview Server Nodes Data Buckets Views XDCR Log Settings

beer-sample > Views

Development Views Production Views 1

Name	Language	Status
_design/beer	javascript	
brewery_beers		
by_location		

Compact Delete Copy to Dev Show Show

Delete the Design Document

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

The screenshot shows the Couchbase Console (2.0.0) interface. The browser address bar displays the URL: `localhost:8091/index.html#sec=views&spatialFilter=bbox%3D-180%2C-90%2C180%2C90%26connection_timeout%3D60000&viewsFilter=connect`. The Couchbase logo is in the top left, and navigation links for Documentation, Support Forums, About, and Sign Out are in the top right. The main navigation bar includes Cluster Overview, Server Nodes, Data Buckets, Views (selected), XDCR, Log, and Settings. Below this, a dropdown menu shows 'beer-sample' and a link to 'Views'. The 'Views' section has tabs for 'Development Views' (selected) and 'Production Views'. A green circle with the number '1' is next to the 'Development Views' tab. A 'Create Development View' button is on the right. The table below lists the views:

Name	Language	Status
<code>_design/dev_beer</code>	javascript	
<code>brewery_beers</code>		
<code>by_location</code>		

For the `_design/dev_beer` view, there are buttons for Compact, Delete, Add Spatial View, Add View, and Publish. For the `brewery_beers` and `by_location` views, there are buttons for Edit and Delete. A yellow callout bubble with the text 'Delete the Design Document' points to the 'Delete' button for the `_design/dev_beer` view.

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

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);  
  }  
}
```

Solution

- Print the list of beer, starting by Q

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

Calling from 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”

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, ...