Cloud and Web Applications

Steps for

Lab: Build a Course Material Sharer

PREFACE

Apply an Account for OpenShift

- Sign up a free account from
  https://www.openshift.com/

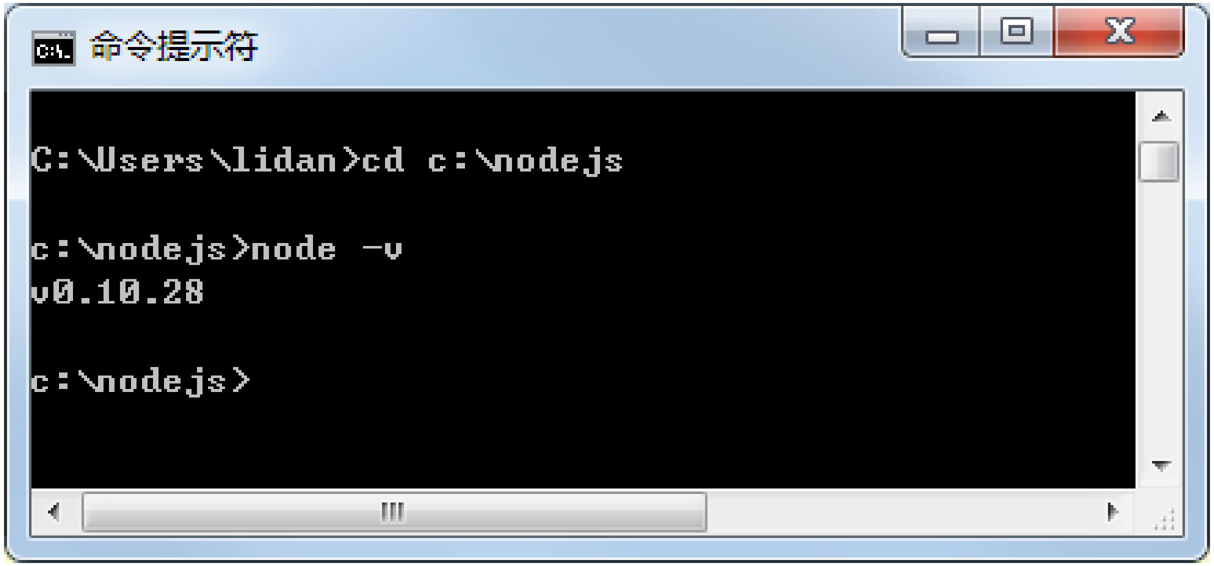
INSTALL TOOLS

Install and start MongoDB

- Create a new folder *c:\mongodb*, and install mongodb by runing mongodb-win32-i386-2.6.3-signed.msi (from the flash mem) to that folder.
- Create a new folder *data* inside the folder *mongodb* to store data
- Copy file *startdb.bat* (from the flash mem) to the *mongodb* folder.
- Start MongoDB by runing the *startdb.bat* in the *mongodb* folder.

Install and Test Node.js

- Create a new folder *c:\nodejs*
- Install Node.js by runing : node-v0.10.28-x86.msi (from the flash mem) to folder *c:\nodejs*
- Open a cmd, Type **`node -v`** in the command line



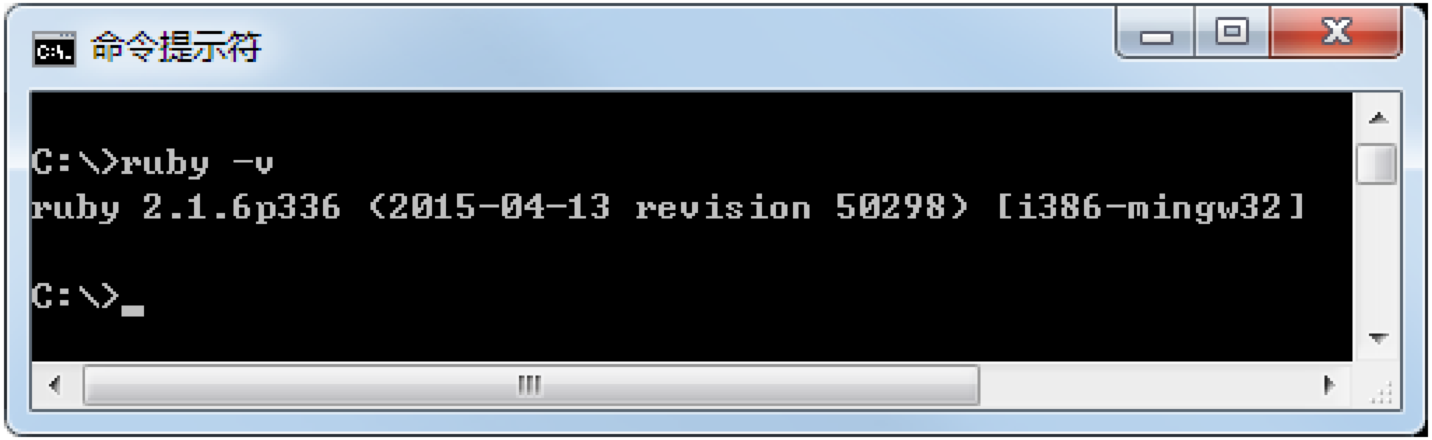
```
C:\Users\lidan>cd c:\nodejs

c:\nodejs>node -v
v0.10.28

c:\nodejs>
```

Install Ruby

- Runing rubyinstaller-2.1.6.exe (from the flash mem) , select the **Add Ruby executables to your PATH** check box.
- Verify the installation:



```
C:\>ruby -v
ruby 2.1.6p336 (2015-04-13 revision 50298) [i386-mingw32]

C:\>_
```

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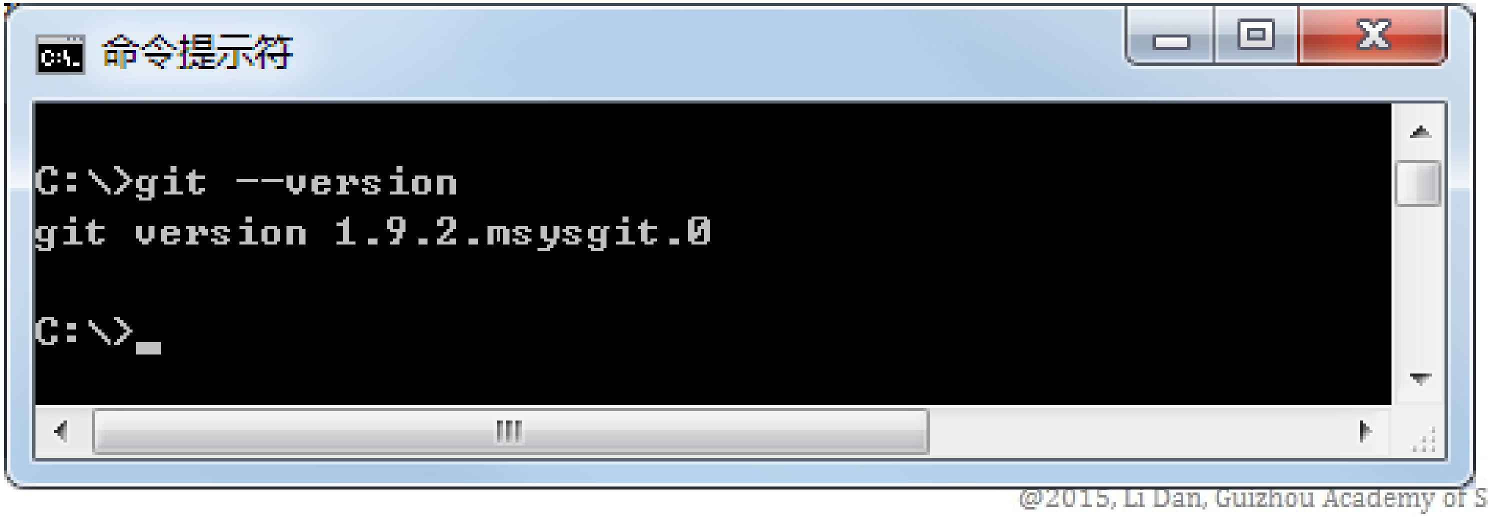
Install Git

- Runing Git-1.9.5-preview20150319.exe (from the flash mem) , selecting the ***Run Git from the Windows Command Link Prompt*** checkbox, also, selecting **Checkout Windows-style, commit Unix-style line endings**.
- Verify the installation:

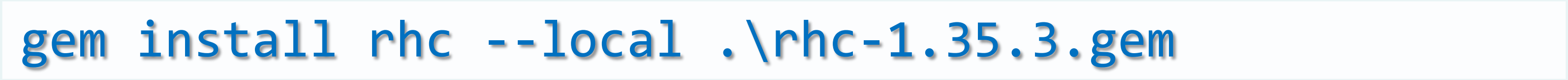


```
C:\>git --version
git version 1.9.2.msysgit.0

C:\>_
```

Install OpenShift gem

- Copy folder rhcgems from the flash mem to *c:\*
- Open a cmd, cd to folder *c:\rhcgems*, and typing:



```
gem install rhc --local .\rhc-1.35.3.gem
```

* The gems package can also be downloaded from http://pan.baidu.com/s/1qWLtjB2

Config OpenShift Gem

- Open a cmd and run:

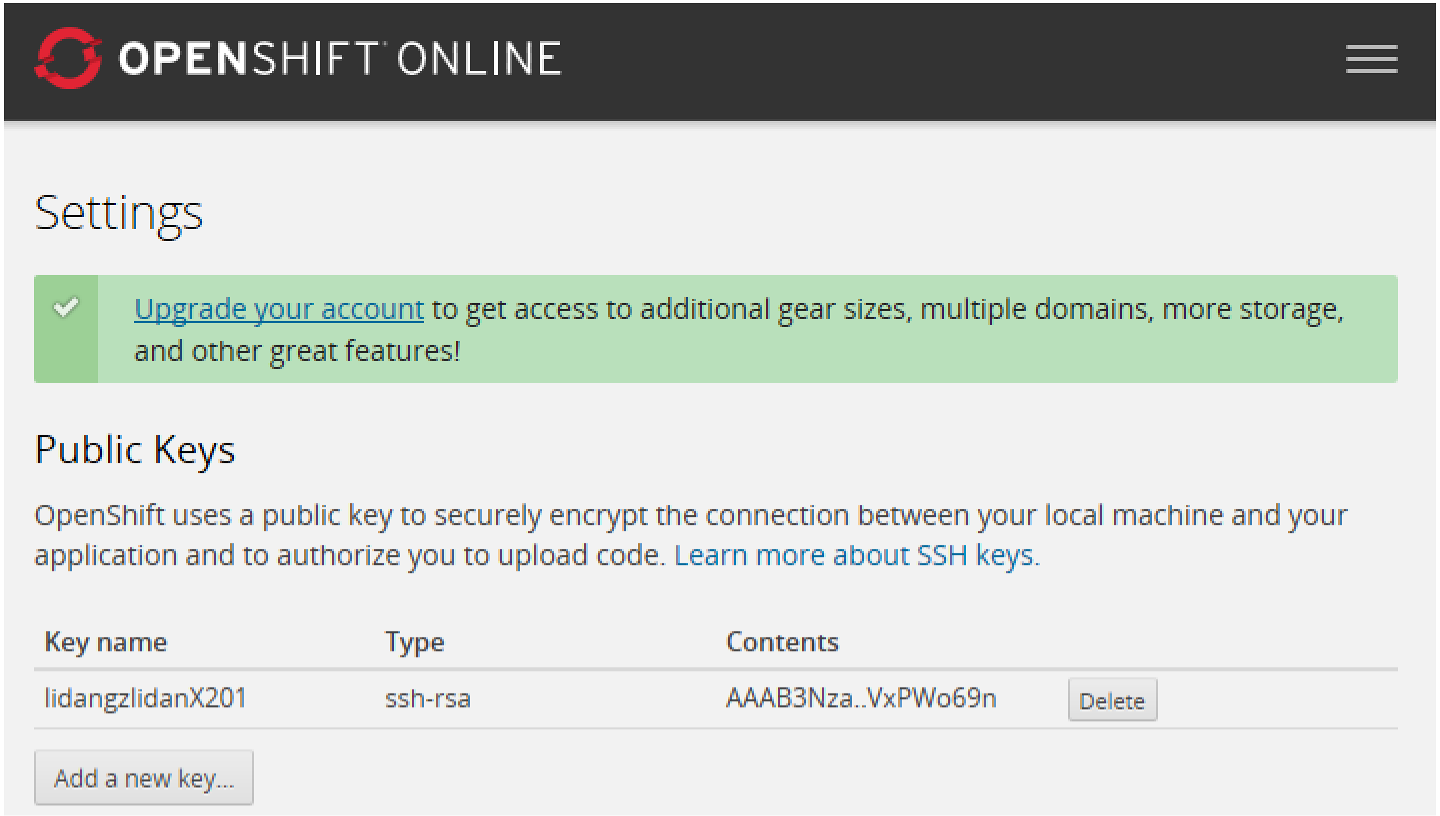
```
rhc setup
```

- Press enter to accept OpenShift server, and input OpenShift username and password;
- Answering yes to generate the SSH keys, and also yes to upload the public key.

CREATE OPENSHIFT APP

Check SSH Key in OpenShift

- Login the web console (https://www.openshift.com/)
- Click on *Settings* to check the Public Keys.



Settings

Upgrade your account to get access to additional gear sizes, multiple domains, more storage, and other great features!

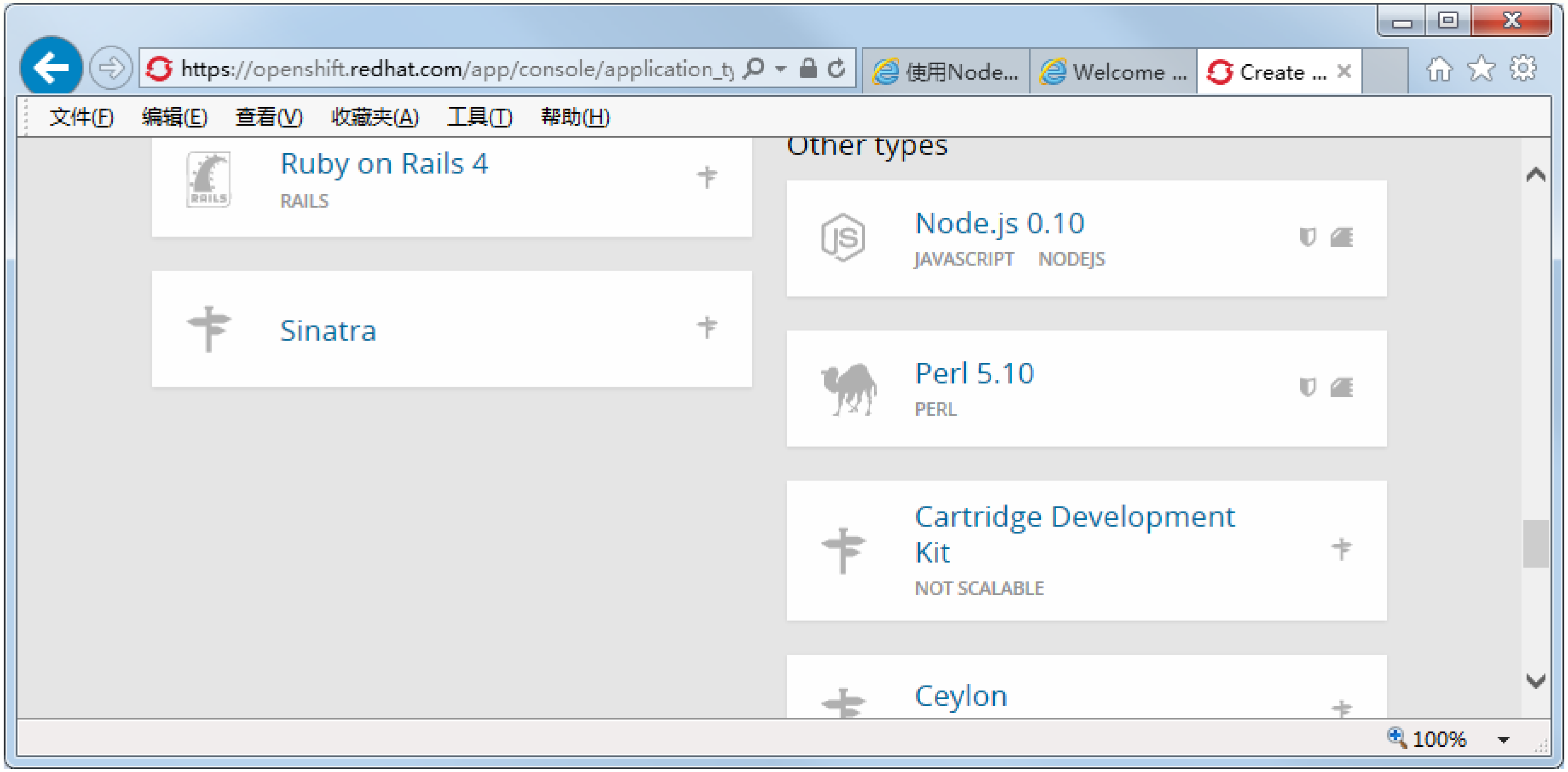
Public Keys

OpenShift uses a public key to securely encrypt the connection between your local machine and your application and to authorize you to upload code. Learn more about SSH keys.

Key name	Type	Contents	
lidangzlidanX201	ssh-rsa	AAAB3Nza..VxPWo69n	Delete

Create an App

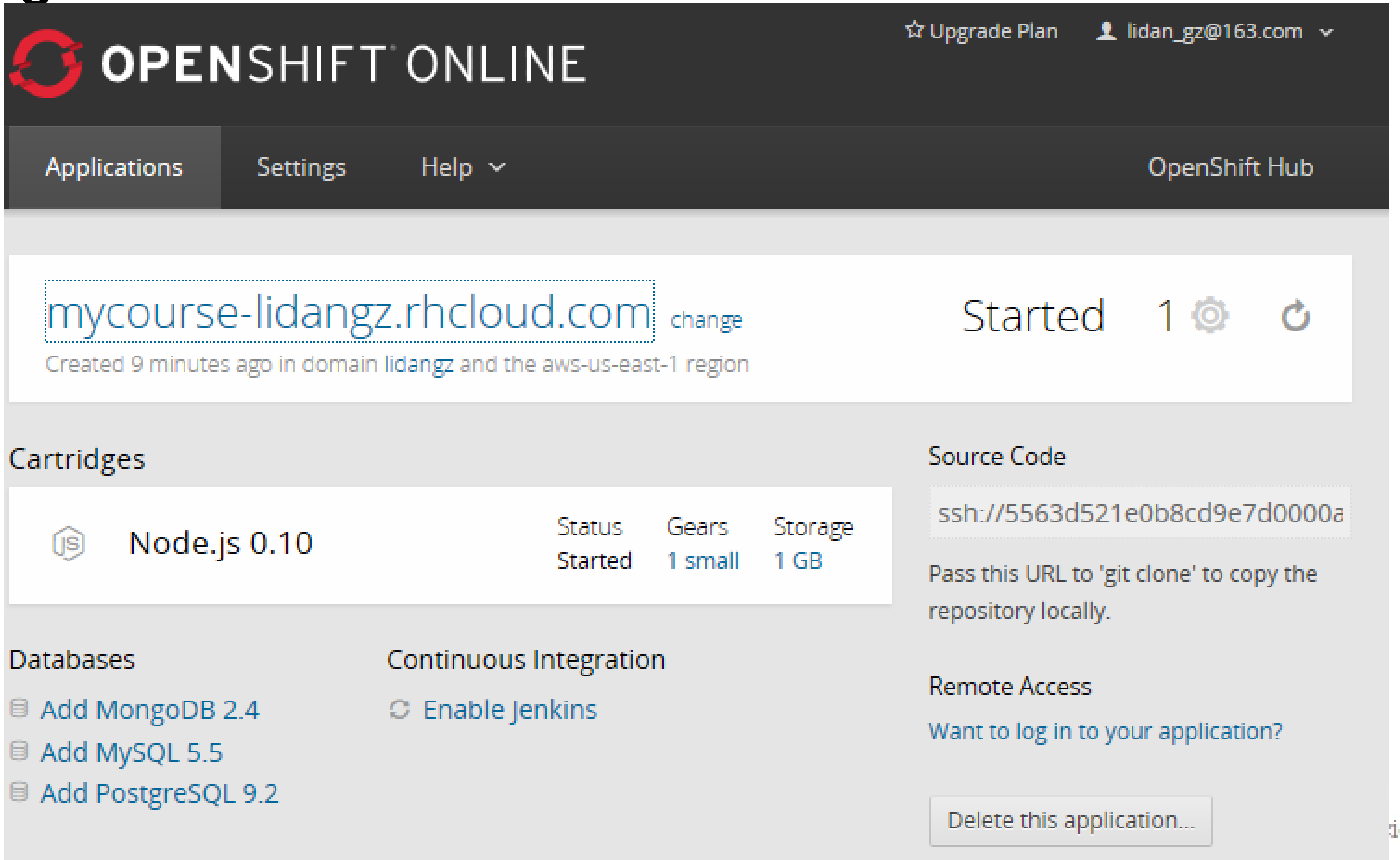
- Click on Applications and Add Application
- Select cartridge *Node.js 0.10*



- In the next page, input, for example "mycourse" to *Public URL,* and press *Create Application*

Add NongoDB to the App

- *Continue to the application overview page*
- *Click* Add MongoDB 2.4, and Add Cartridge in next page



mycourse-lidangz.rhcloud.com change

Created 9 minutes ago in domain lidangz and the aws-us-east-1 region

Started 1

Cartridges

	Status	Gears	Storage
Node.js 0.10	Started	1 small	1 GB

Databases

- Add MongoDB 2.4
- Add MySQL 5.5
- Add PostgreSQL 9.2

Continuous Integration

- Enable Jenkins

Source Code

ssh://5563d521e0b8cd9e7d0000a

Pass this URL to 'git clone' to copy the repository locally.

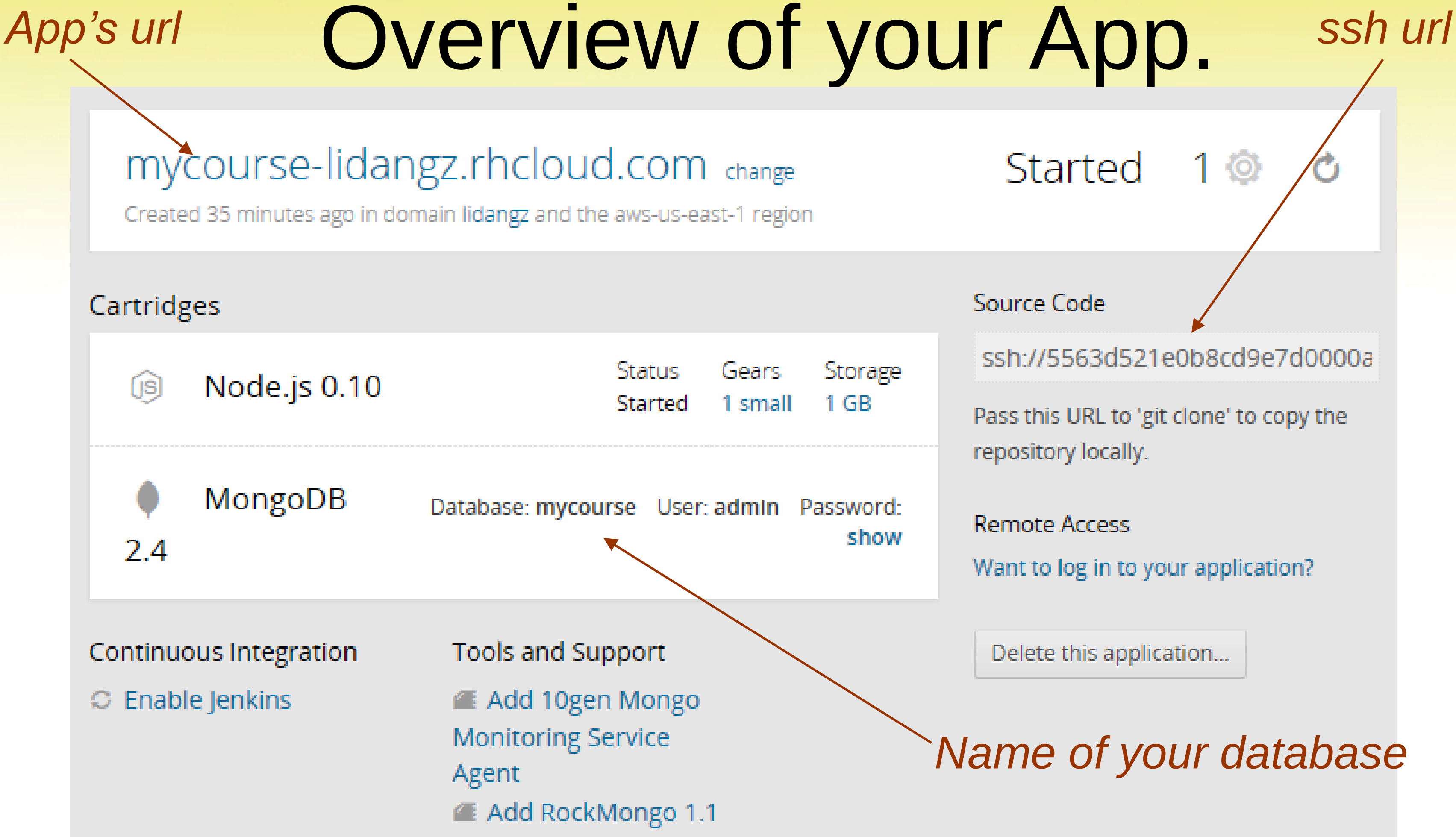
Remote Access

Want to log in to your application?

Delete this application...

iences

Overview of your App.



App's url

ssh url

mycourse-lidangz.rhcloud.com change

Created 35 minutes ago in domain lidangz and the aws-us-east-1 region

Started 1

Cartridges

Node.js 0.10

Status	Gears	Storage
Started	1 small	1 GB

MongoDB 2.4

Database: mycourse User: admin Password: show

Name of your database

Source Code

ssh://5563d521e0b8cd9e7d0000a

Pass this URL to 'git clone' to copy the repository locally.

Remote Access

Want to log in to your application?

Continuous Integration

Enable Jenkins

Tools and Support

Add 10gen Mongo Monitoring Service Agent

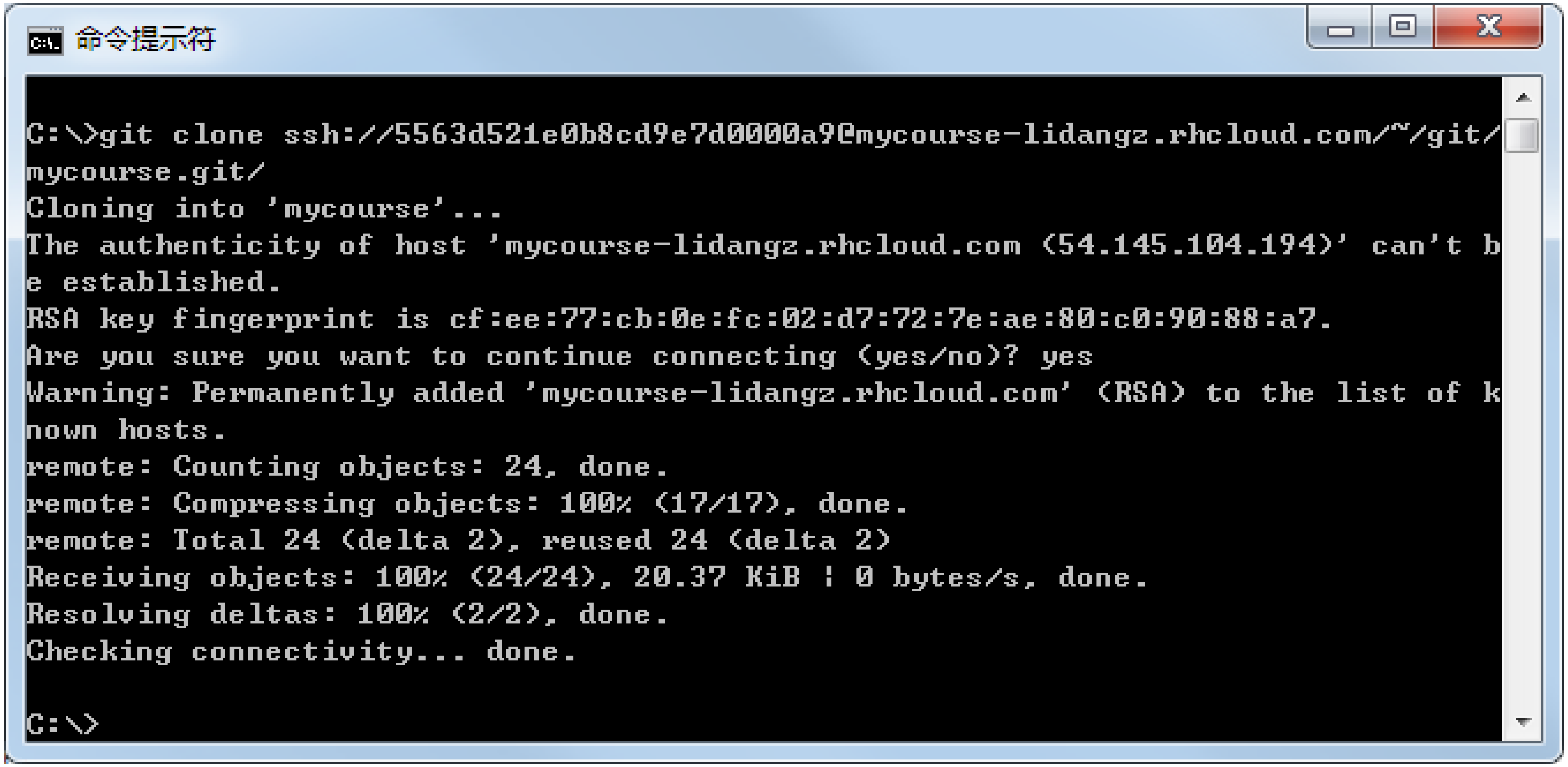
Add RockMongo 1.1

- Copy your `sshUrl` under the Source Code

Download Skeleton Code

- Open a cmd, goto c:\, and run

```
git clone <sshUrl>
```



```
C:\>git clone ssh://5563d521e0b8cd9e7d0000a9@mycourse-lidangz.rhcloud.com/~/git/
mycourse.git/
Cloning into 'mycourse'...
The authenticity of host 'mycourse-lidangz.rhcloud.com (54.145.104.194)' can't b
e established.
RSA key fingerprint is cf:ee:77:cb:0e:fc:02:d7:72:7e:ae:80:c0:90:88:a7.
Are you sure you want to continue connecting (yes/no)? yes
Warning: Permanently added 'mycourse-lidangz.rhcloud.com' (RSA) to the list of k
nown hosts.
remote: Counting objects: 24, done.
remote: Compressing objects: 100% (17/17), done.
remote: Total 24 (delta 2), reused 24 (delta 2)
Receiving objects: 100% (24/24), 20.37 KiB | 0 bytes/s, done.
Resolving deltas: 100% (2/2), done.
Checking connectivity... done.

C:\>
```

- Now, the c:\mycourse is your project folder.

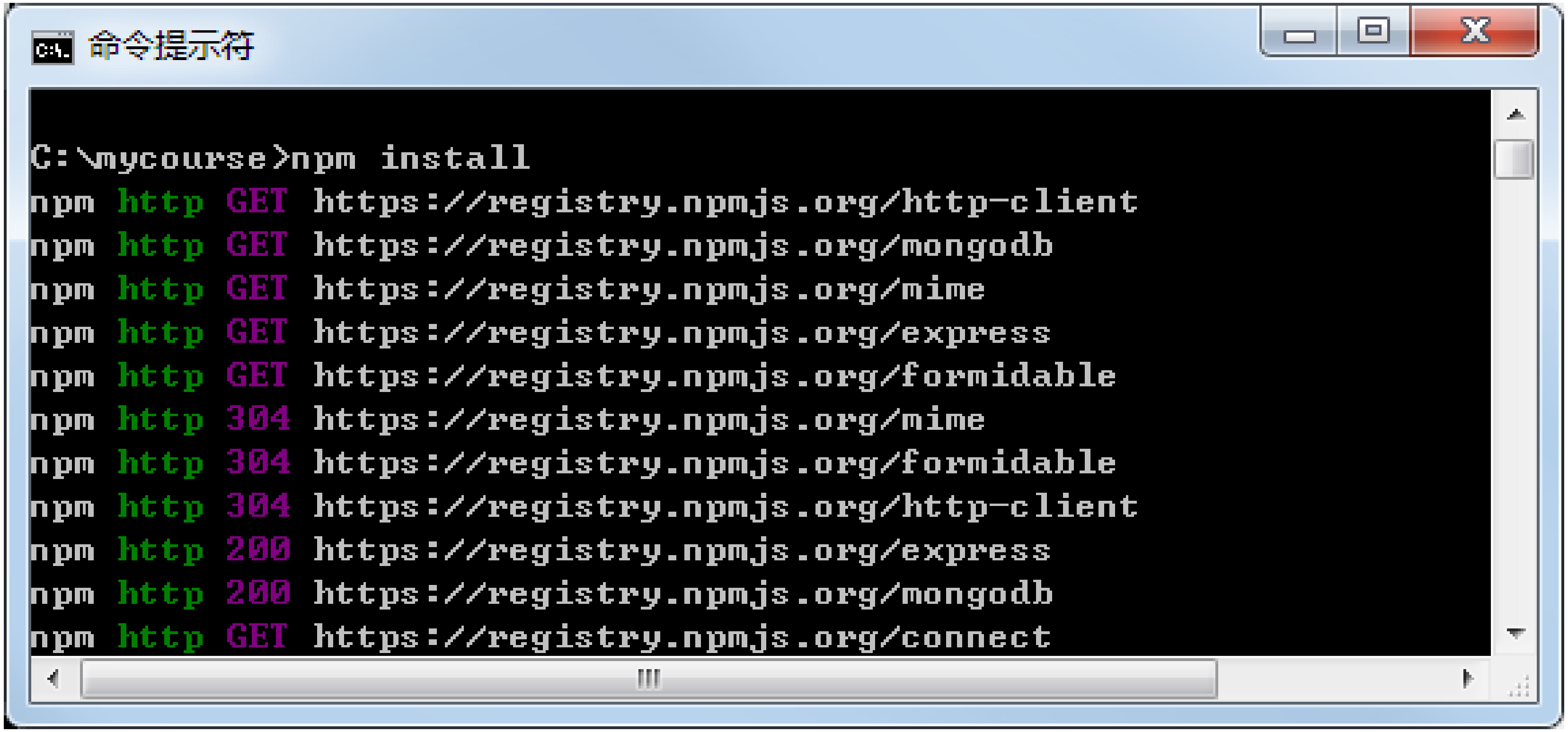
Copy App Source Code

- Copy all files from Code_Part4_Lab.zip (in the flash mem) to the project folder c:\mycourse
- Now the project folder has the following files.
  - Server-side
    - *server.js* -- app main entry, route the requests
    - *handlers.js* -- actually deal with the requests
    - *dbutils.js* -- database connection
    - *package.json* -- configuration file
  - Client-side
    - *Index.html* -- front-end html file

Install Dependencies

- In the cmd, goto the project folder c:\mycourse, run:

```
npm install
```



```
C:\mycourse>npm install
npm http GET https://registry.npmjs.org/http-client
npm http GET https://registry.npmjs.org/mongodb
npm http GET https://registry.npmjs.org/mime
npm http GET https://registry.npmjs.org/express
npm http GET https://registry.npmjs.org/formidable
npm http 304 https://registry.npmjs.org/mime
npm http 304 https://registry.npmjs.org/formidable
npm http 304 https://registry.npmjs.org/http-client
npm http 200 https://registry.npmjs.org/express
npm http 200 https://registry.npmjs.org/mongodb
npm http GET https://registry.npmjs.org/connect
```

Check the *dbutils.js*

```
var mongostr = {                                        // local machine
                    "hostname":"localhost",
                    "port":27017,
                    "username":“tom",
                    "password":"1234",
                    "name":"",
                    "db":"course"
}
if(process.env.OPENSHIFT_NODEJS_PORT){                  // OpenShift
          mongostr = {
                    "hostname":process.env.OPENSHIFT_MONGODB_DB_HOST,
                    "port":process.env.OPENSHIFT_MONGODB_DB_PORT,
                    "username":process.env.OPENSHIFT_MONGODB_DB_USERNAME,
                    "password": process.env.OPENSHIFT_MONGODB_DB_PASSWORD,
                    "name":"",
                    "db":"mycourse"
          }
}
exports.getMongoUrl = function() {
    return "mongodb://" + mongostr.username + ":" +
                              mongostr.password + "@" + mongostr.hostname + ":"
                              + mongostr.port + "/" + mongostr.db;
}
```

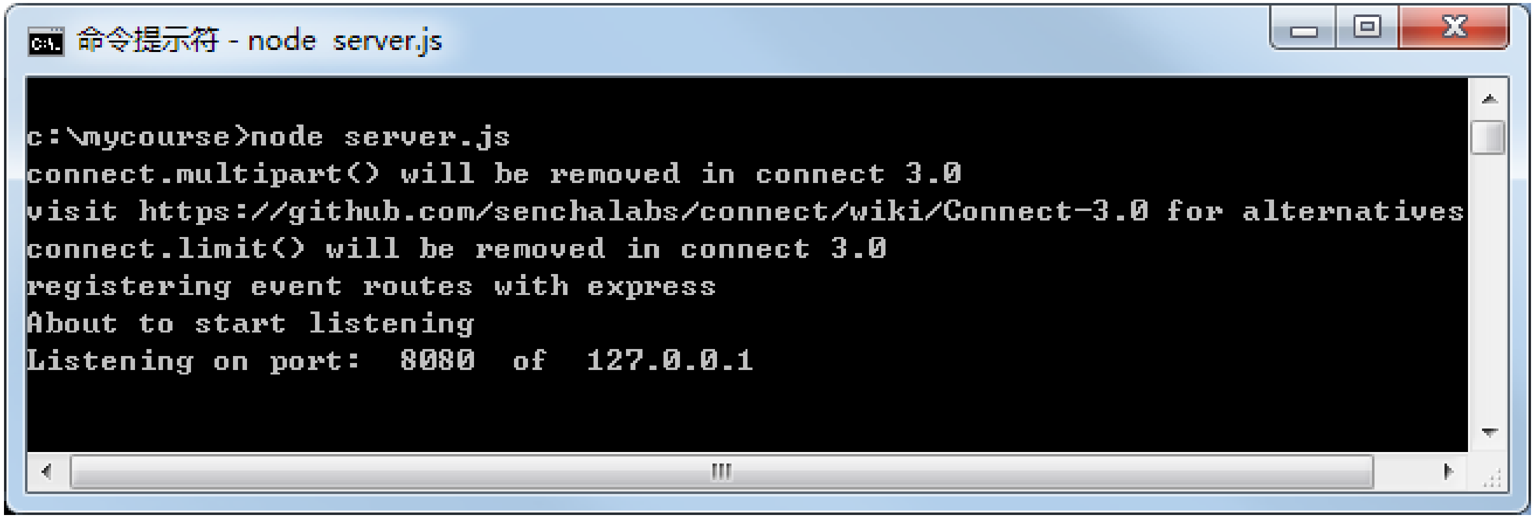
Change the name and password

Change to name of your database

TEST AND DEPLOY THE APP

Test the App in Local

- Be sure the mogondb is started
- Open a cmd, cd to the project folder, and start the Node.js server



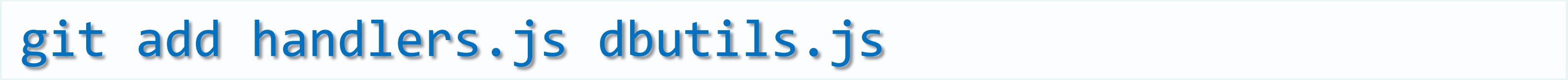
```
c:\mycourse>node server.js
connect.multipart() will be removed in connect 3.0
visit https://github.com/senchalabs/connect/wiki/Connect-3.0 for alternatives
connect.limit() will be removed in connect 3.0
registering event routes with express
About to start listening
Listening on port:  8080  of  127.0.0.1
```

- Access http://localhost:8080/ from an IE
- Check the log message showed by Nodejs

Upload code to OpenShift

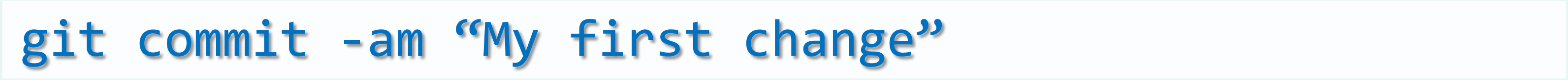
- Open a cmd, cd to the project folder, runing

1. Add the two new js files to git control



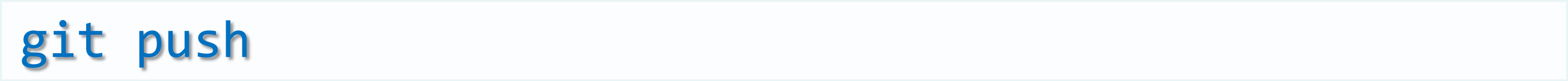
```
git add handlers.js dbutils.js
```

2. Commit the changes to local git repository



```
git commit -am “My first change”
```

3. Push the code to OPENSHIFT server*

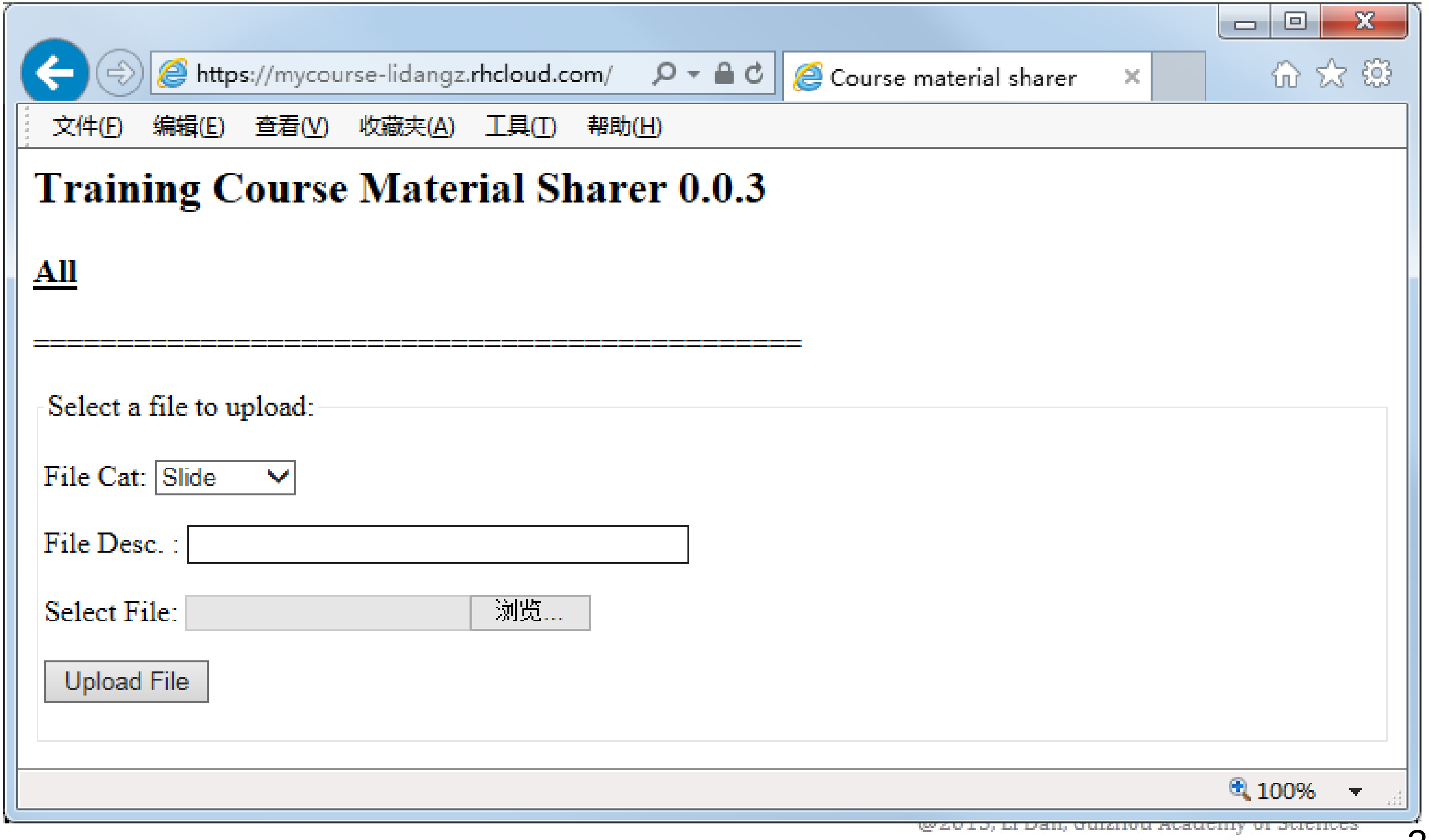


```
git push
```

* Try several times if errors

Test the App in OpenShift

- Open an IE, access you app’s url using https



Training Course Material Sharer 0.0.3

All

===

Select a file to upload:

File Cat: Slide

File Desc. :

Select File: 浏览...

Upload File