System Configuration Guides

Openshift

Service Engineering Lab

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Dependencies

1	PuttyGen, Putty
2	WinSCP
3	Ruby
4	Red Hat Client tool

Environment Setup

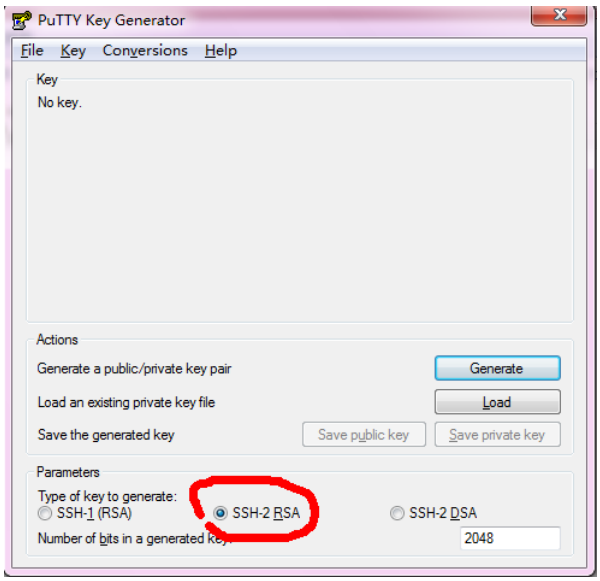
Openshift is a PaaS (Platform as a Service) cloud space provided by RedHat. Each account has 3 application gears and each gear has free 512M memory space and 1G hard disk space. Openshift supports JAVA, PHP, Tomcat, PostgreSQL and MongoDB.

Generate pubkey by PuttyGen

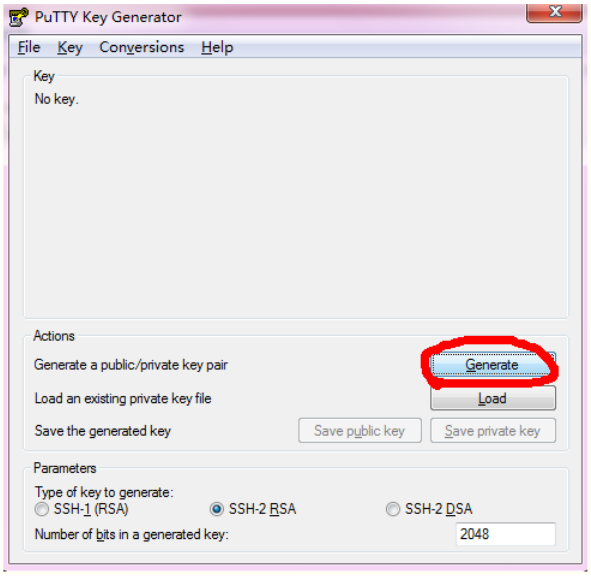
1. Download PuttyGen: http://the.earth.li/~sgtatham/putty/latest/x86/puttygen.exe

PuttyGen will be used for generating pubkey. Pubkey is used for uploading your project to Openshift.

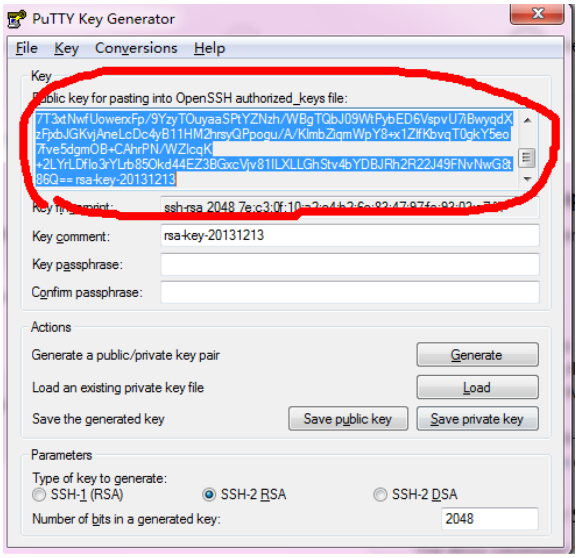
Open PuttyGen and select **SSH-2 RSA**



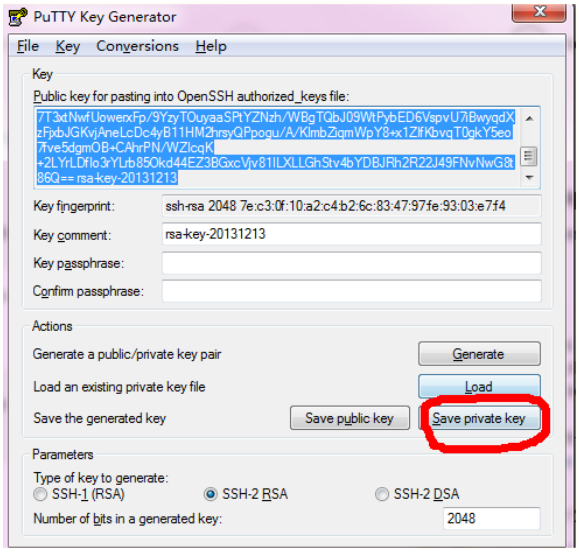
2. Click **Generate** button to generate pubkey, after clicking please **moving your mouse randomly** as requested by PuttyGen:

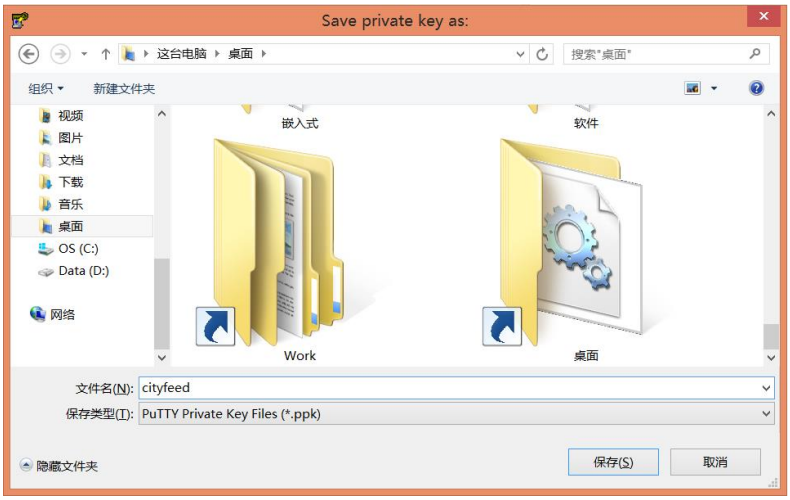


3. Generated pubkey: please copy the key string, we will use it later.



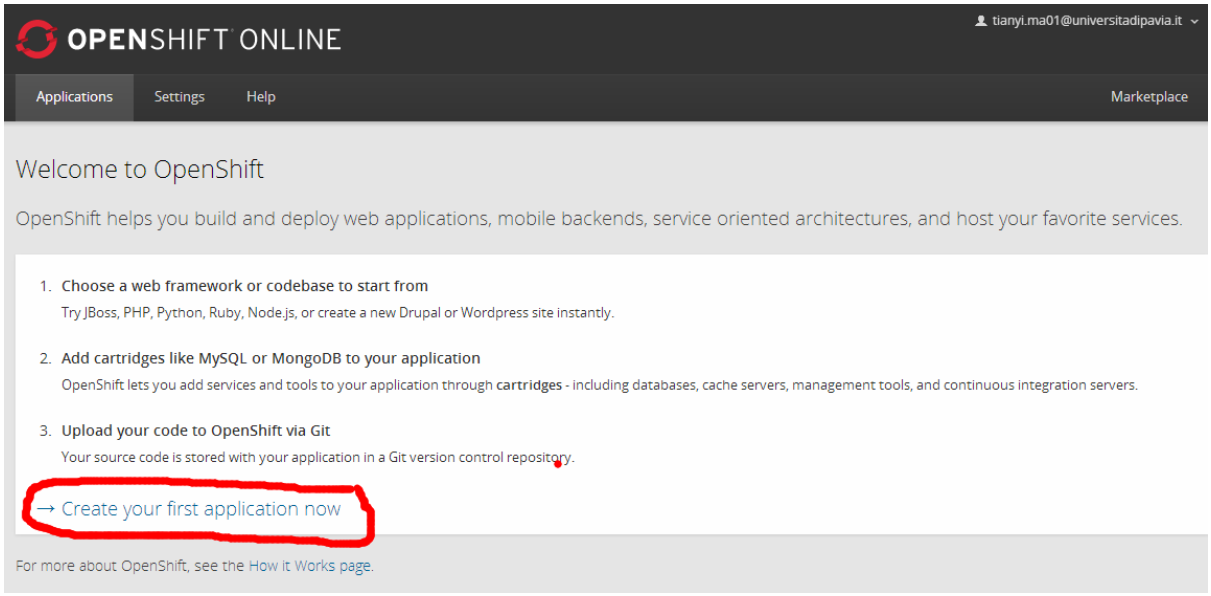
4. Click **save private key** and give it a name.



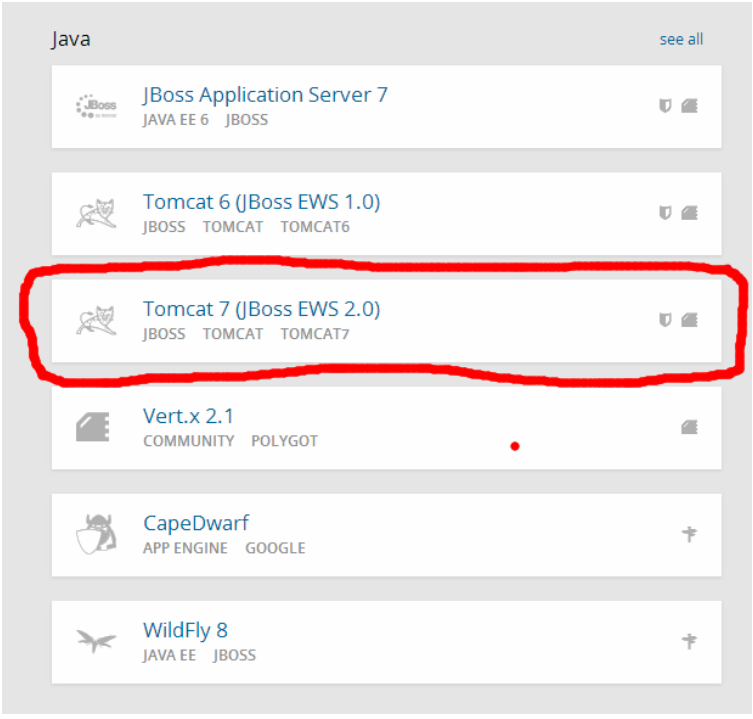


Create your application on Openshift

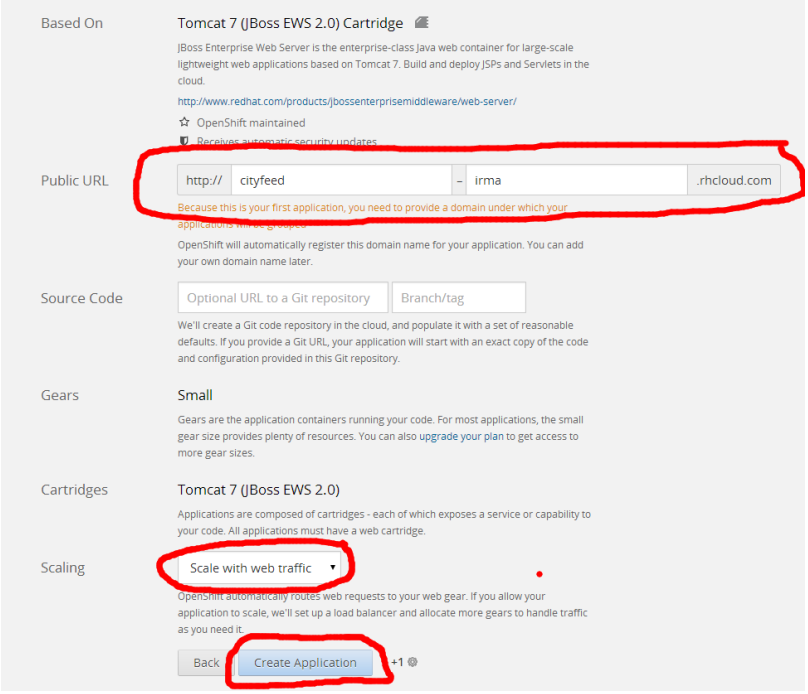
1. Login Openshift, click **Create your first application now**.



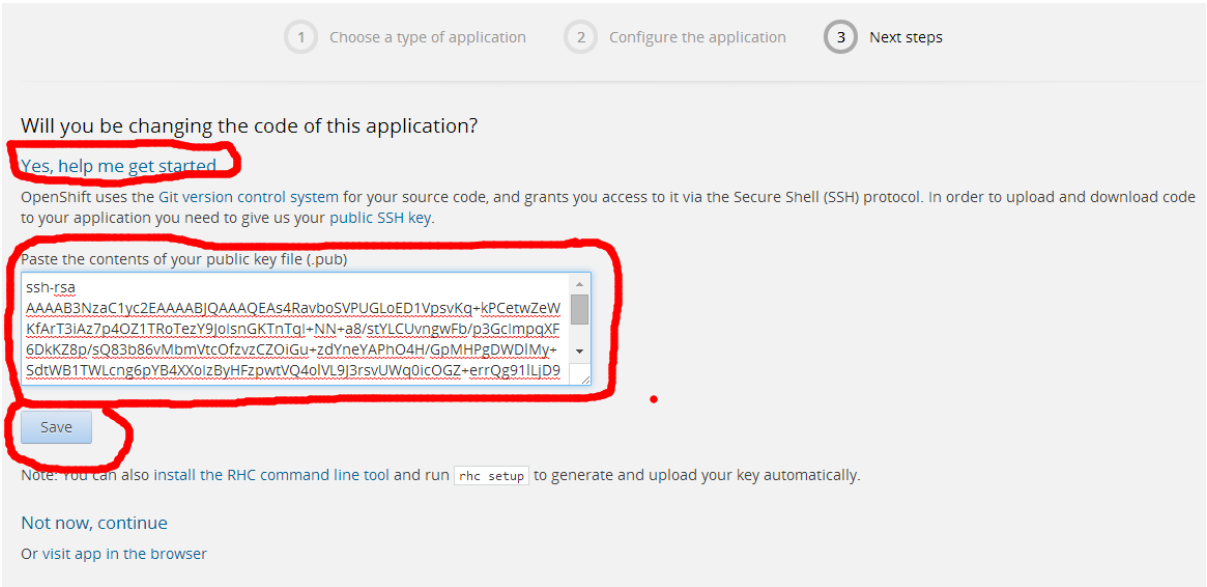
2. Drag down the page and find **Java** -> **Tomcat 7**, click it.



3. Fill in your **application name** and **domain group name**, select **Scale with web traffic,** click **Create Application**:



4. Click **Yes, help me get started**, paste your **pubkey** string generated before, click **save**.



5. Visit your web site: http://cityfeed-irma.rhcloud.com/, you will see following page:

Welcome to your JBossEWS (Apache/Tomcat) application on OpenShift

Deploying code changes

OpenShift uses the Git version control system for your source code, and grants you access to it via the Secure Shell (SSH) protocol. In order to upload and download code to your application you need to give us your public SSH key. You can upload it within the web console or install the RHC command line tool and run `rhc setup` to generate and upload your key automatically.

Working in your local Git repository

If you created your application from the command line and uploaded your SSH key, rhc will automatically download a copy of that source code repository (Git calls this 'cloning') to your local system.

If you created the application from the web console, you'll need to manually clone the repository to your local system. Copy the application's source code Git URL and then run:

```
$ git clone <git_url> <directory_to_create>

# Within your project directory
# Commit your changes and push to OpenShift

$ git commit -a -m 'Some commit message'
$ git push
```

- Learn more about deploying and building your application
- See the README file in your local application Git repository for more information on the options for deploying applications.

Managing your application

Web Console

You can use the OpenShift web console to enable additional capabilities via cartridges, add collaborator access authorizations, designate custom domain aliases, and manage domain memberships.

Command Line Tools

Installing the OpenShift RHC client tools allows you complete control of your cloud environment. Read more on how to manage your application from the command line in our User Guide.

Development Resources

JBoss Developer Studio

The JBoss Developer Studio is a full featured IDE with OpenShift integration built in. It gives you the ability to create, edit and deploy applications without having to leave the IDE. Links to download, install and use the JBoss Developer Studio for Linux, Mac OS X, or Windows can be found on the JBoss Developer Studio tools page.

Debugging

View debugging information about the server environment including memory pools.

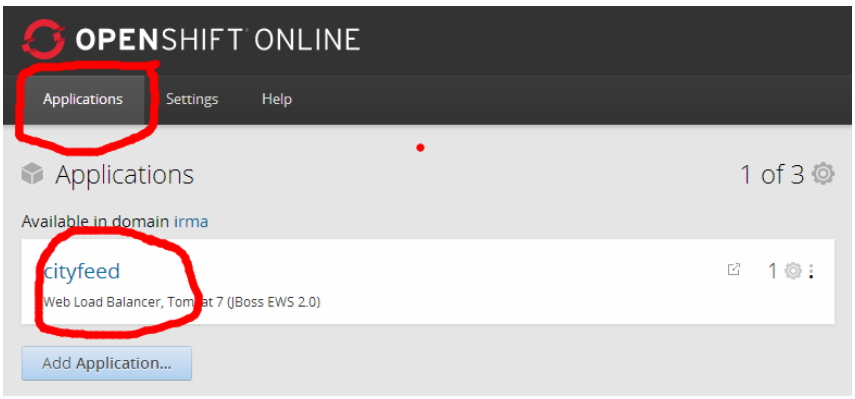
- Developer Center
- User Guide
- OpenShift Support
- Stack Overflow questions for OpenShift
- IRC channel at #openshift on freenode.net
- Git documentation

Built on

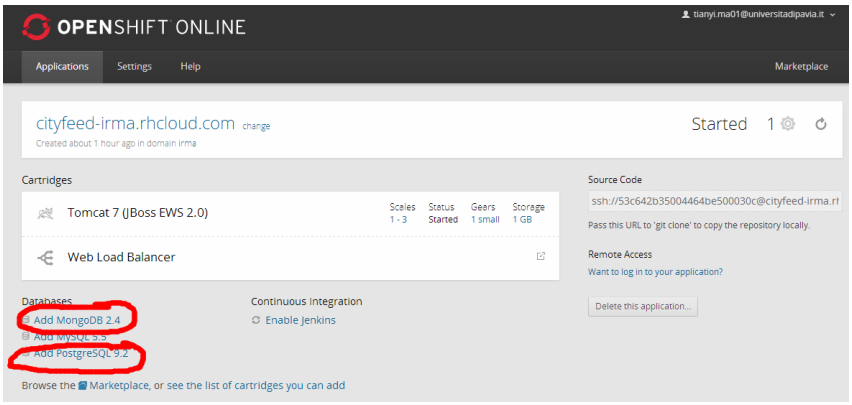
OPENSHIFT by Red Hat

Add database to your Openshift gear

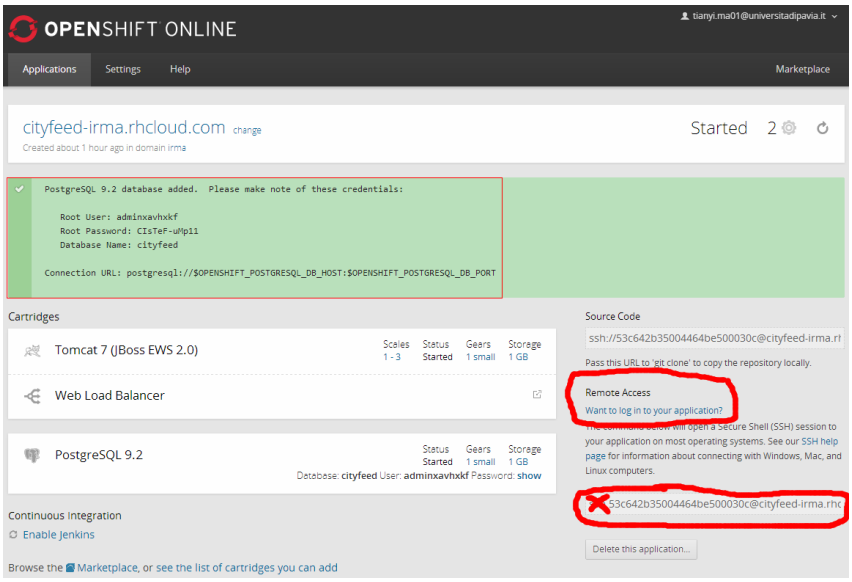
1. Click **Applications ->** Click your application



2. Choose your database:



3. Remember your database information. You will use it in your database connection configuration files. Click **Want to log in to your application** to get your SSH address, copy the address string (**the part without "ssh"!**). The SSH address is used for controlling this remote machine from your computer (see next chapter).



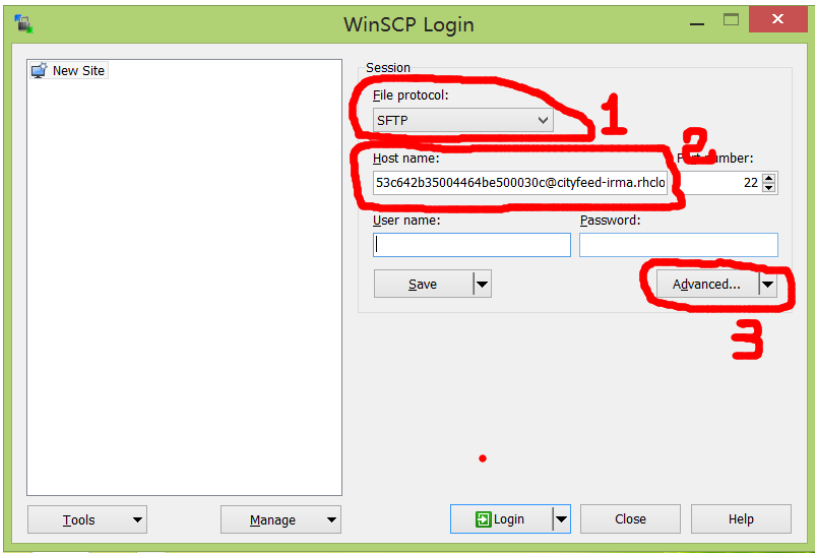
Remote control

File management

You can access files on your Openshift space.

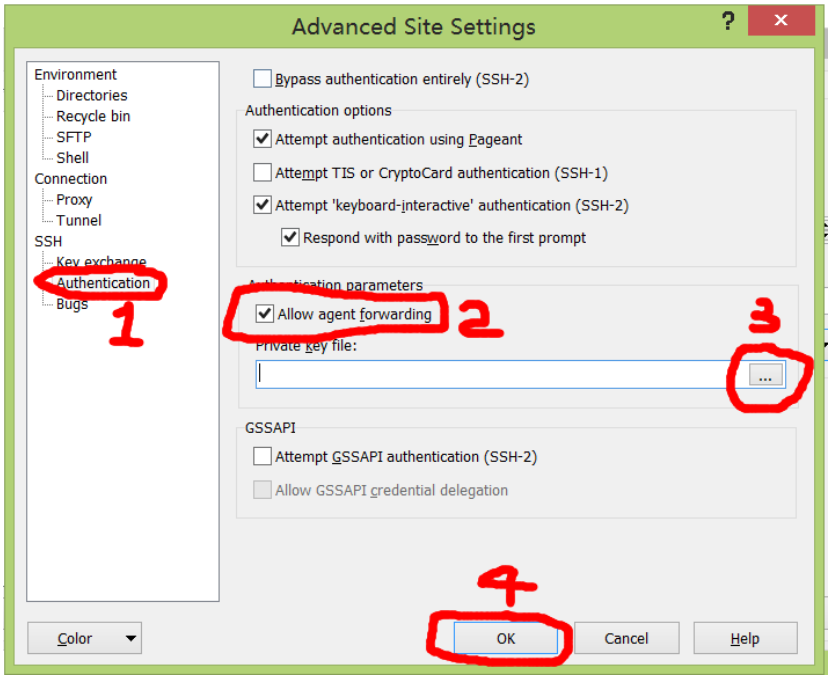
1. Download WinSCP: http://winscp.net/download/winscp554setup.exe

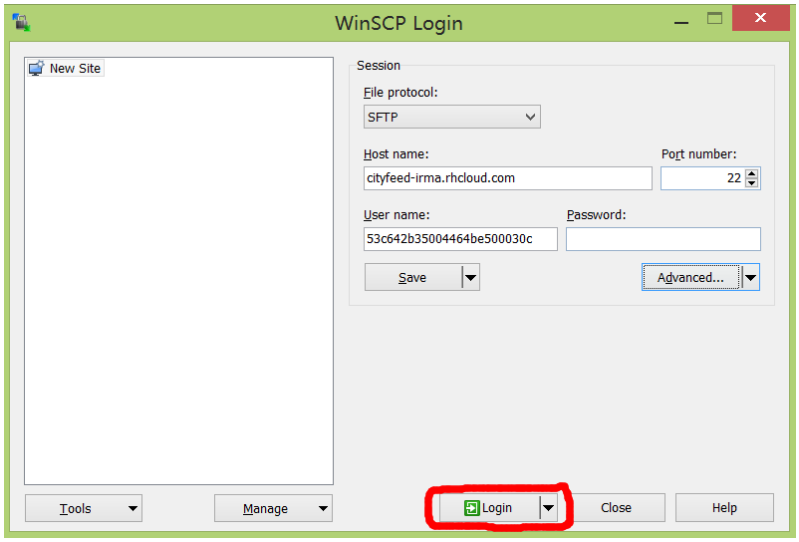
2. Install WinSCP and open it. Select **SFTP** in **File protocol**, paste ssh string in host name. Click **Advanced** to import pubkey generated before.



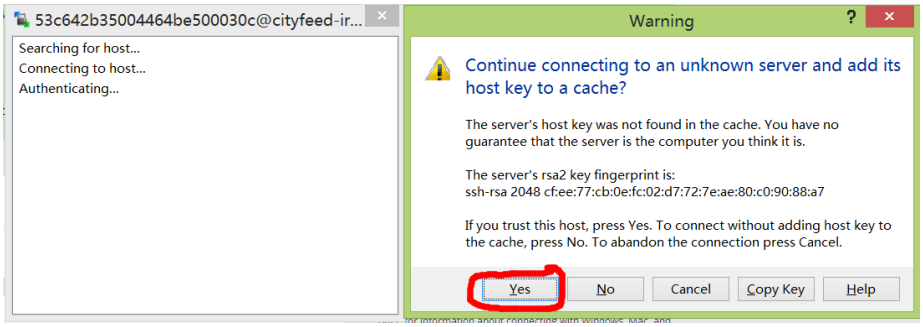
3. Click **Authentication** in SSH, check **Allow agent forwarding**, click 

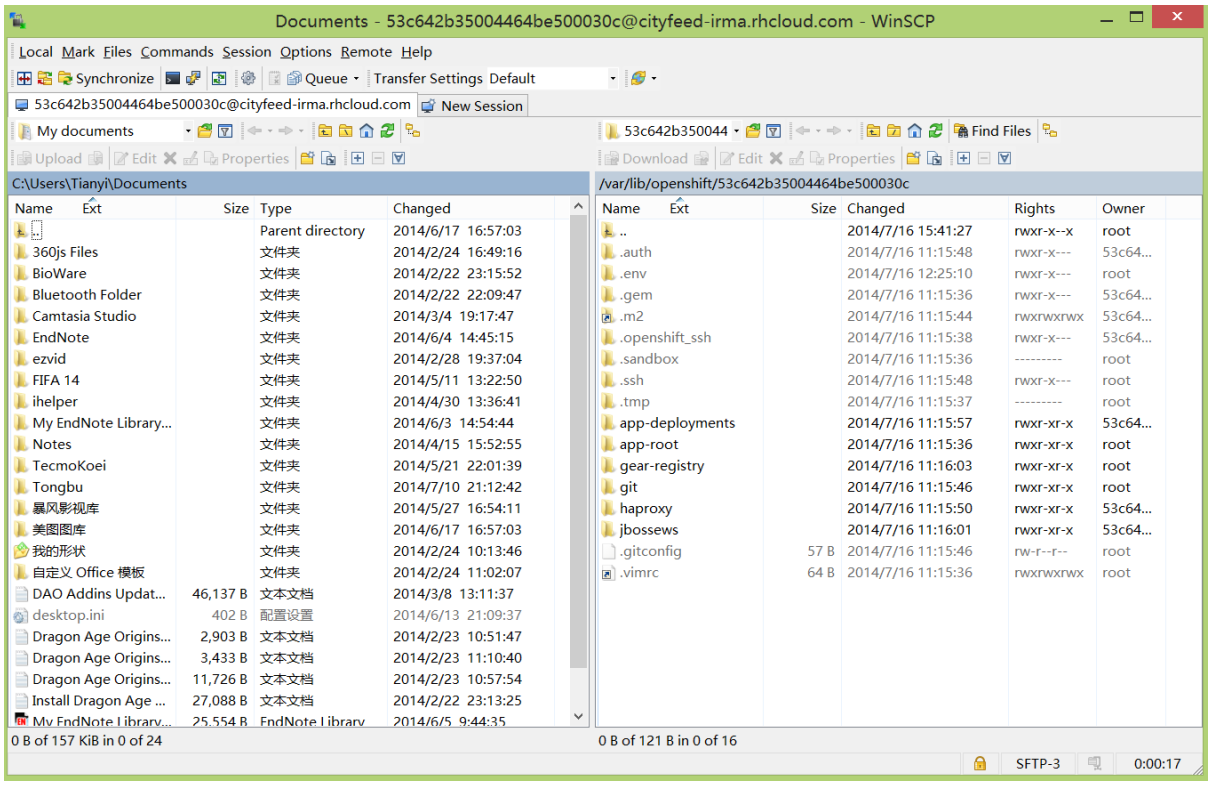
to select pubkey file. Click **OK** –> Click **Login** button.



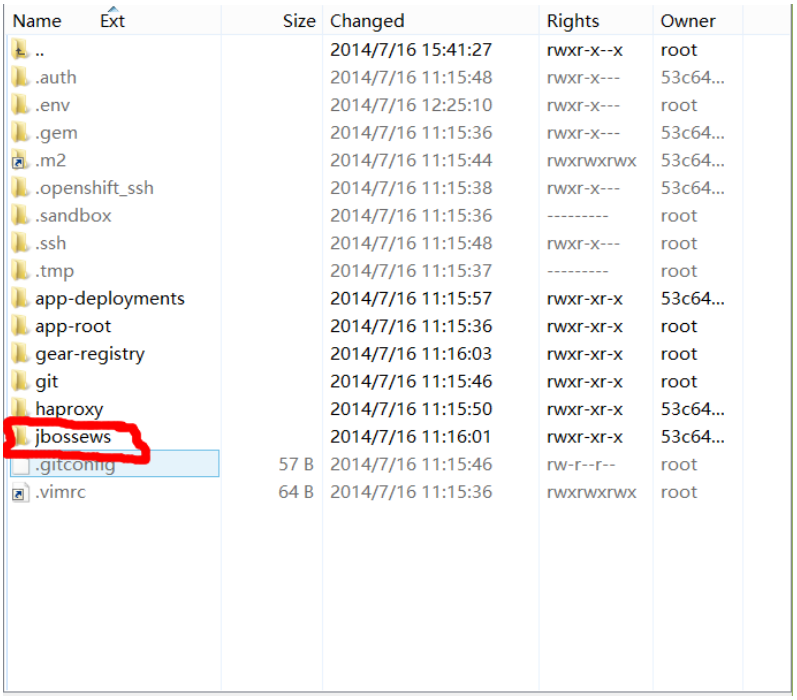


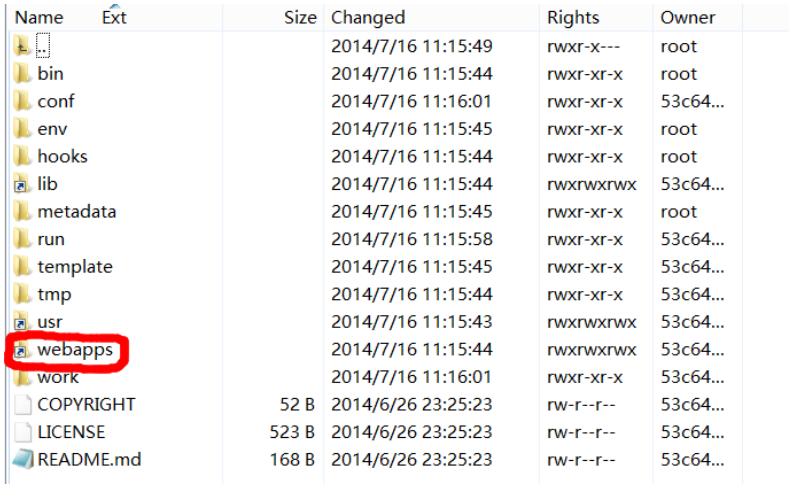
4. Click **Yes.**



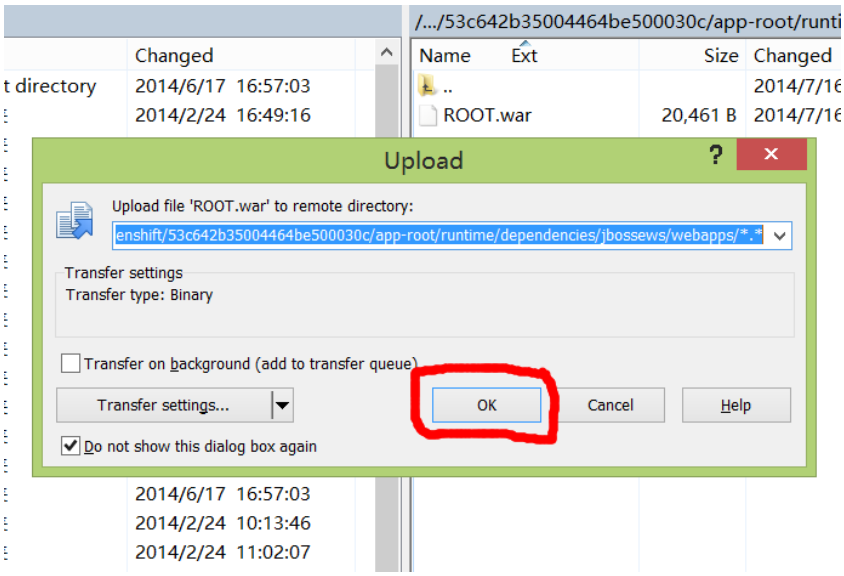


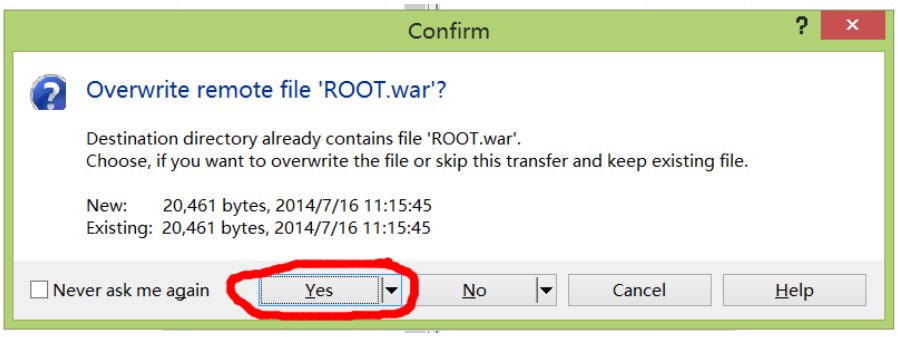
5. Deploy your **war** file in **jbossews** -> **webapps**



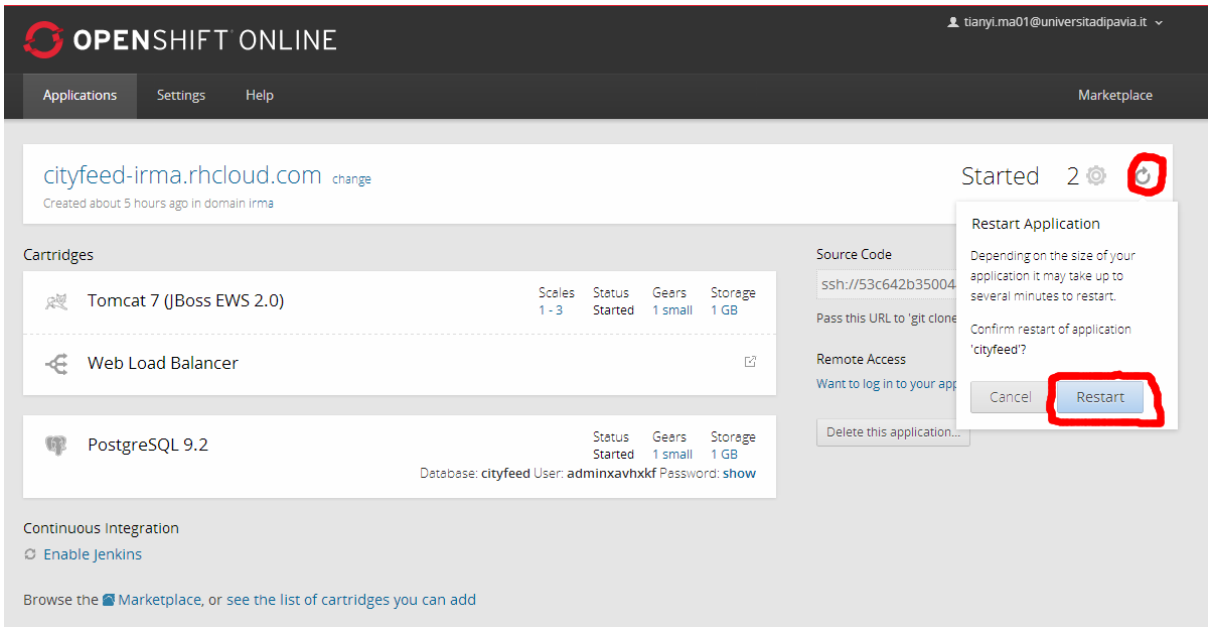


6. Rename your application war as **ROOT.war**. Drag war file into this directory to upload this file.





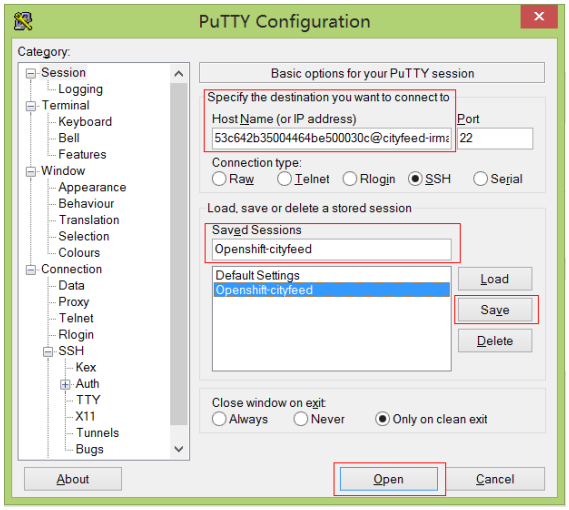
7. Restart your application to confirm the change: go to main panel, click to restart application.

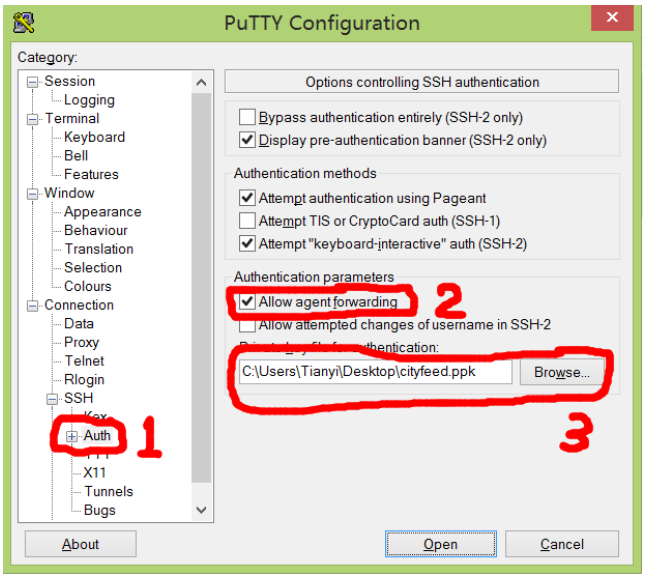


Use command line to control remote machine

1. Download Putty: http://the.earth.li/~sgtatham/putty/latest/x86/putty.exe

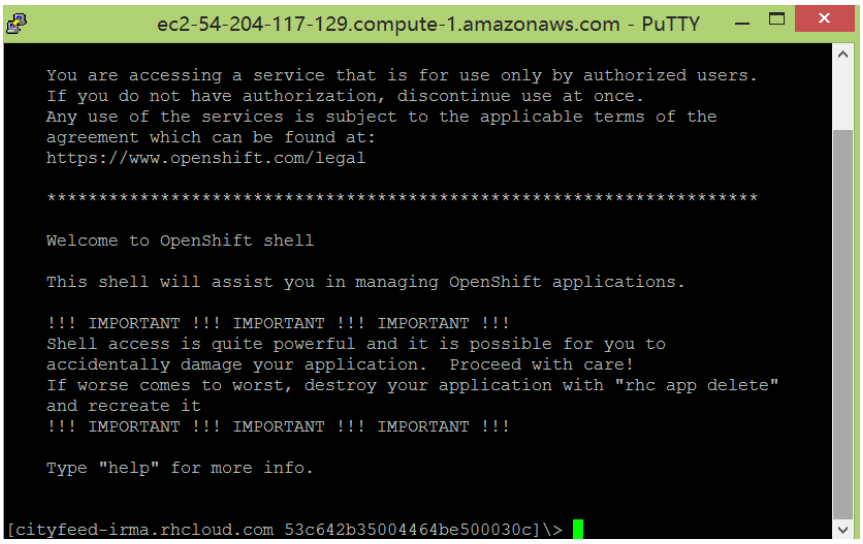
2. Open Putty, input SSH string to **Host Name**, then click **Connection** -> **SSH** -> **Auth** -> **check Allow agent forwading** -> **Browse** -> select pubkey generated from first chapter -> Click **Save** (next time you can double click sessions that you saved to access shell command) -> Click **Open:**





3. Click **Yes**

4. If successfully login, you can see this shell command window. You can use LINUX command from this command window.



Use Red Hat Client tool to create tunnel link between local machine to Openshift

1. You need to use Red Hat Client tool to open a remote access to database on Openshift.

2. Before installing RHC tool, you must install Ruby on your computer. Download Ruby here: http://rubyinstaller.org/downloads/

3. When you finish installing Ruby, open a CMD window, type following command to test your Ruby environment:

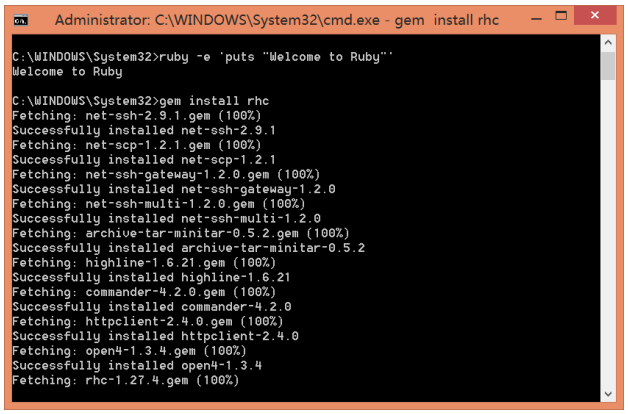
ruby -e 'puts "Welcome to Ruby"'

If it shows *Welcome to Ruby*, *means* you have successfully installed Ruby.

Then install RHC by typing following command:

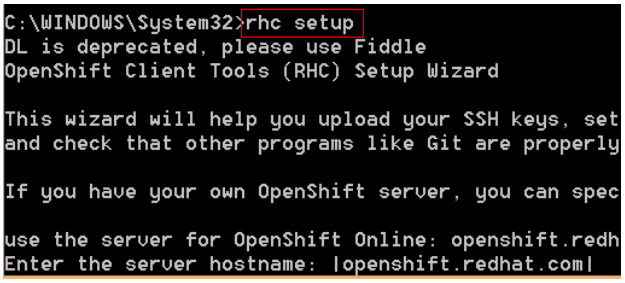
gem install rhc

It will install RHC tool automatically on your computer.



4. Setup RHC by typing following command:

rhc setup



Directly press "**Enter**" button -> enter your **username** and **password** of Openshift -> "**Yes**" to generate a private key for RHC tool (so that you don't have to re-login next time) –> "**Yes**" to upload the key.

5. After setup, type following command to create a tunnel between your computer to your application gear on Openshift:

rhc port-forward cityfeed

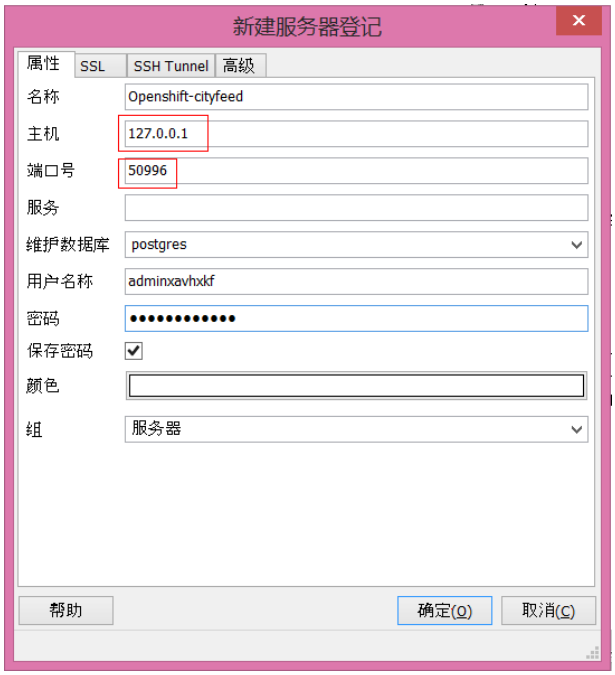
You can see the bridges between your computer to Openshift.

```
To connect to a service running on OpenShift, use the Local address

Service    Local                 OpenShift
---------- --------------- ---- -----------------------------------------------
haproxy    127.0.0.1:8081    =>  127.8.108.130:8080
haproxy    127.0.0.1:8082    =>  127.8.108.131:8080
java       127.0.0.1:8083    =>  127.8.108.129:8080
postgresql 127.0.0.1:50996   =>  53c652f150044612130000c6-irma.rhcloud.com:50996

Press CTRL-C to terminate port forwarding
```

You can visit your database (take PostgreSQL for example) from local address (don't close above CMD!):



Then you can restore your database on Openshift server.

If you can't find your database parameters, please login from Putty, enter command "env", find following parameters (please copy them on your computer!):

`OPENSHIFT_POSTGRESQL_DB_HOST` *your database address, not useful here.*

`OPENSHIFT_POSTGRESQL_DB_USERNAME` *username of PostgreSQL*

`OPENSHIFT_POSTGRESQL_DB_URL` *database connection string used in JDBC*

`OPENSHIFT_POSTGRESQL_DB_PORT` *port number of database*

`PGPASSWORD` *password of your database*