OPENSHIFT

redhat.

OpenShift
on you own cloud

Troy Dawson
OpenShift Engineer, Red Hat
tdawson@redhat.com
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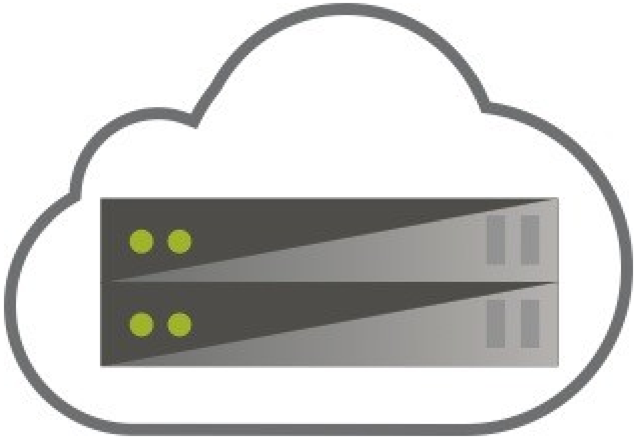
Infrastructure-as-a-Service

Servers in the Cloud

You must build and manage everything
(OS, App Servers, DB, App, etc.)



“How do I use this?”

Software-as-a-Service

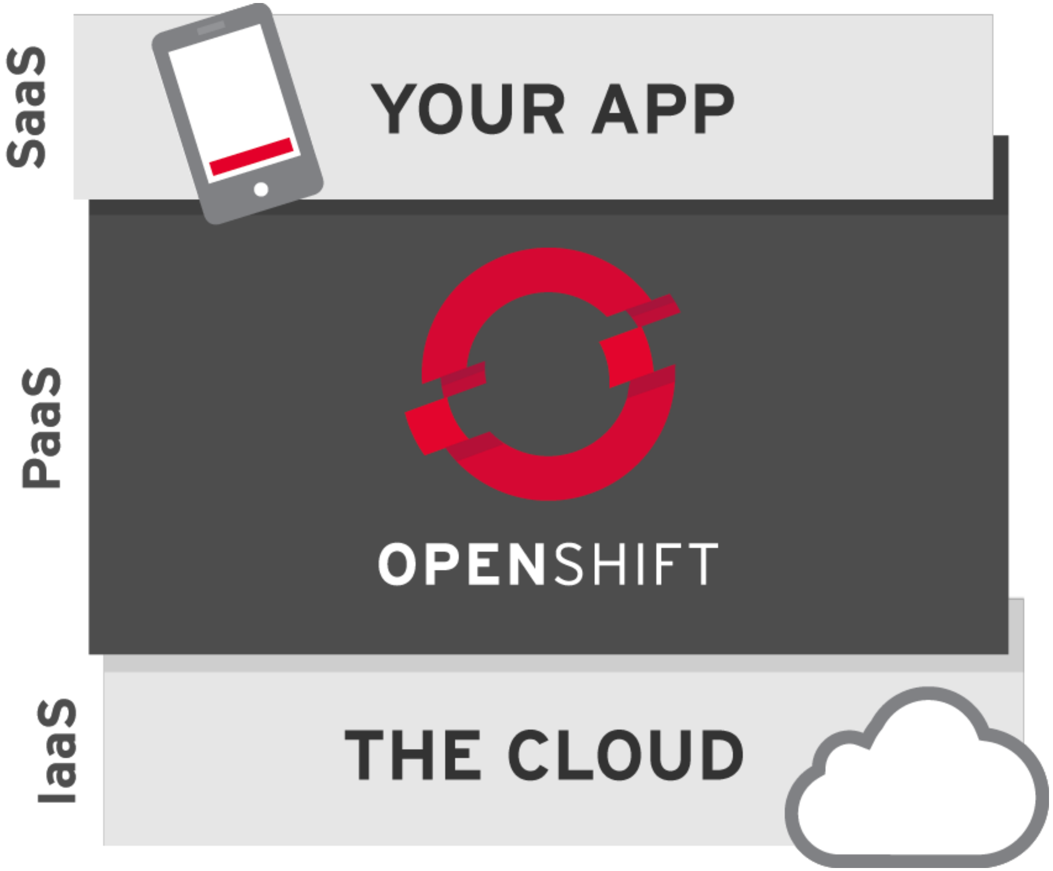
Someone else’s app in the Cloud (CRM, etc.)

You are restricted to the features of the 3rd Party application

“I’m not sure this does what I need.”

What is OpenShift?

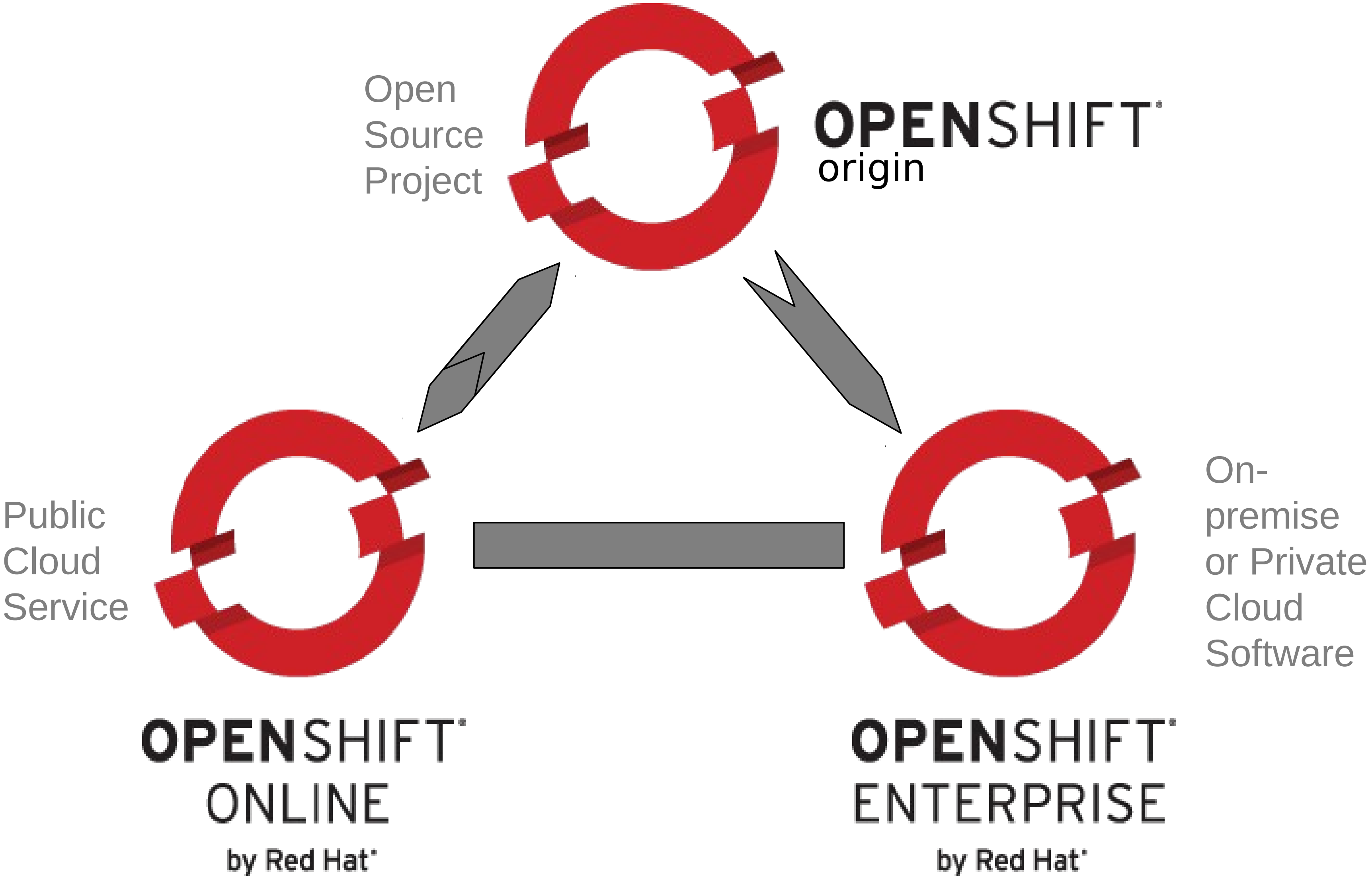
Red Hat’s platform as a service for applications in the cloud.



Now in 3 Delicious Flavors

- OpenShift Online
  - Traditional OpenShift
  - Red Hat provides everything
  - You sit back and relax
- OpenShift Origin
  - You build it from Source
  - You put it on your infrastructure
- OpenShift Enterprise
  - Red Hat provides the software
  - You provide the infrastructure

FLAVORS OF OPENSHIFT



Open Source Project

OPENSHIFT origin

Public Cloud Service

OPENSHIFT ONLINE by Red Hat

On-premise or Private Cloud Software

OPENSHIFT ENTERPRISE by Red Hat

RUNS ON IaaS

OpenShift Origin and OpenShift Enterprise run on top of ... Infrastructure

Amazon EC2

Rackspace

Bare Metal

OpenStack

RHEV

VMWare

- **Operations care about stability and performance**
- **Developers just want environments without waiting**

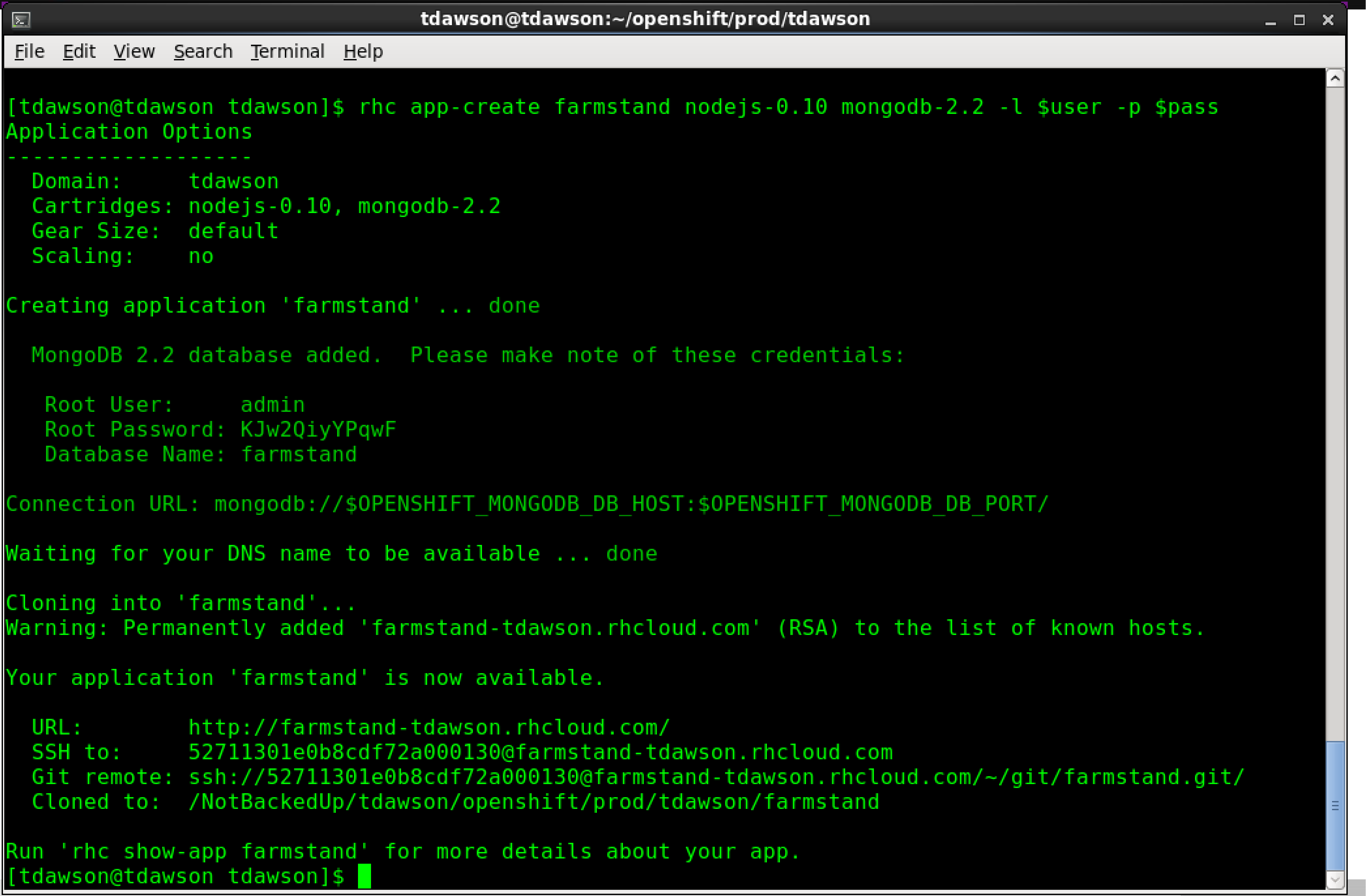
OpenShift Enterprise creates a peaceful environment for both parties

KEY TERMS

- Broker – Management host, orchestration of Nodes
- Node – Compute host containing Gears
- App – Your Application. An app contains one or more gears, that contain one or more cartridges.
- Gear – Allocation of fixed memory, compute, and storage resources for running applications
- Cartridge – A technology/framework (PHP, Perl, Node.js, Ruby, Python, MySQL, etc.) to build applications

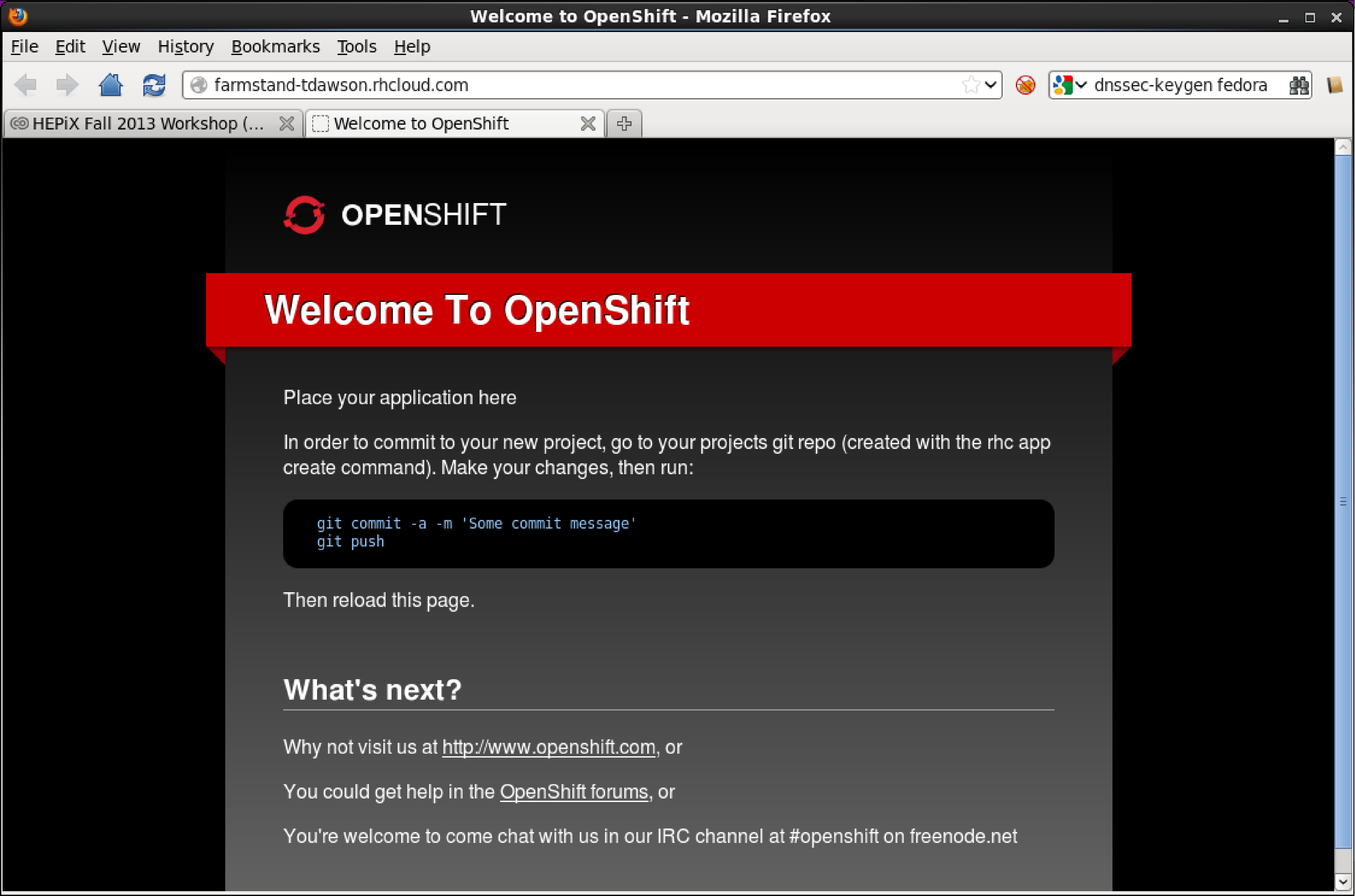
First Demo (Done on OpenShift Online)

1. Create an app called farmstand
   - Note: can now add cartridges when creating app
2. Look at URL of fresh app.
   - http://farmstand-tdawson.rhcloud.com/
3. Make changes to our code locally
   - This is a local git repository we are changing
   - Demo uses a shortcut, use whatever way you want
4. Push changes up to server
   - Notice how it will add the various language modules to the app and then compile if necessary.
5. See change in page
   - http://farmstand-tdawson.rhcloud.com/



tdawson@tdawson:~/openshift/prod/tdawson
File Edit View Search Terminal Help

```
[tdawson@tdawson tdawson]$ rhc app-create farmstand nodejs-0.10 mongodb-2.2 -l $user -p $pass
Application Options
-------------------
  Domain:     tdawson
  Cartridges: nodejs-0.10, mongodb-2.2
  Gear Size:  default
  Scaling:    no

Creating application 'farmstand' ... done

  MongoDB 2.2 database added.  Please make note of these credentials:

   Root User:     admin
   Root Password: KJw2QiyYPqwF
   Database Name: farmstand

Connection URL: mongodb://$OPENSHIFT_MONGODB_DB_HOST:$OPENSHIFT_MONGODB_DB_PORT/

Waiting for your DNS name to be available ... done

Cloning into 'farmstand'...
Warning: Permanently added 'farmstand-tdawson.rhcloud.com' (RSA) to the list of known hosts.

Your application 'farmstand' is now available.

  URL:        http://farmstand-tdawson.rhcloud.com/
  SSH to:     52711301e0b8cdf72a000130@farmstand-tdawson.rhcloud.com
  Git remote: ssh://52711301e0b8cdf72a000130@farmstand-tdawson.rhcloud.com/~/git/farmstand.git/
  Cloned to:  /NotBackedUp/tdawson/openshift/prod/tdawson/farmstand

Run 'rhc show-app farmstand' for more details about your app.
[tdawson@tdawson tdawson]$
```


Welcome to OpenShift - Mozilla Firefox
File Edit View History Bookmarks Tools Help
farmstand-tdawson.rhcloud.com
dnssec-keygen fedora
HEPiX Fall 2013 Workshop (...
Welcome to OpenShift
OPENSHIFT

Welcome To OpenShift

Place your application here

In order to commit to your new project, go to your projects git repo (created with the rhc app create command). Make your changes, then run:

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

Then reload this page.

What's next?

Why not visit us at http://www.openshift.com, or

You could get help in the OpenShift forums, or

You're welcome to come chat with us in our IRC channel at #openshift on freenode.net

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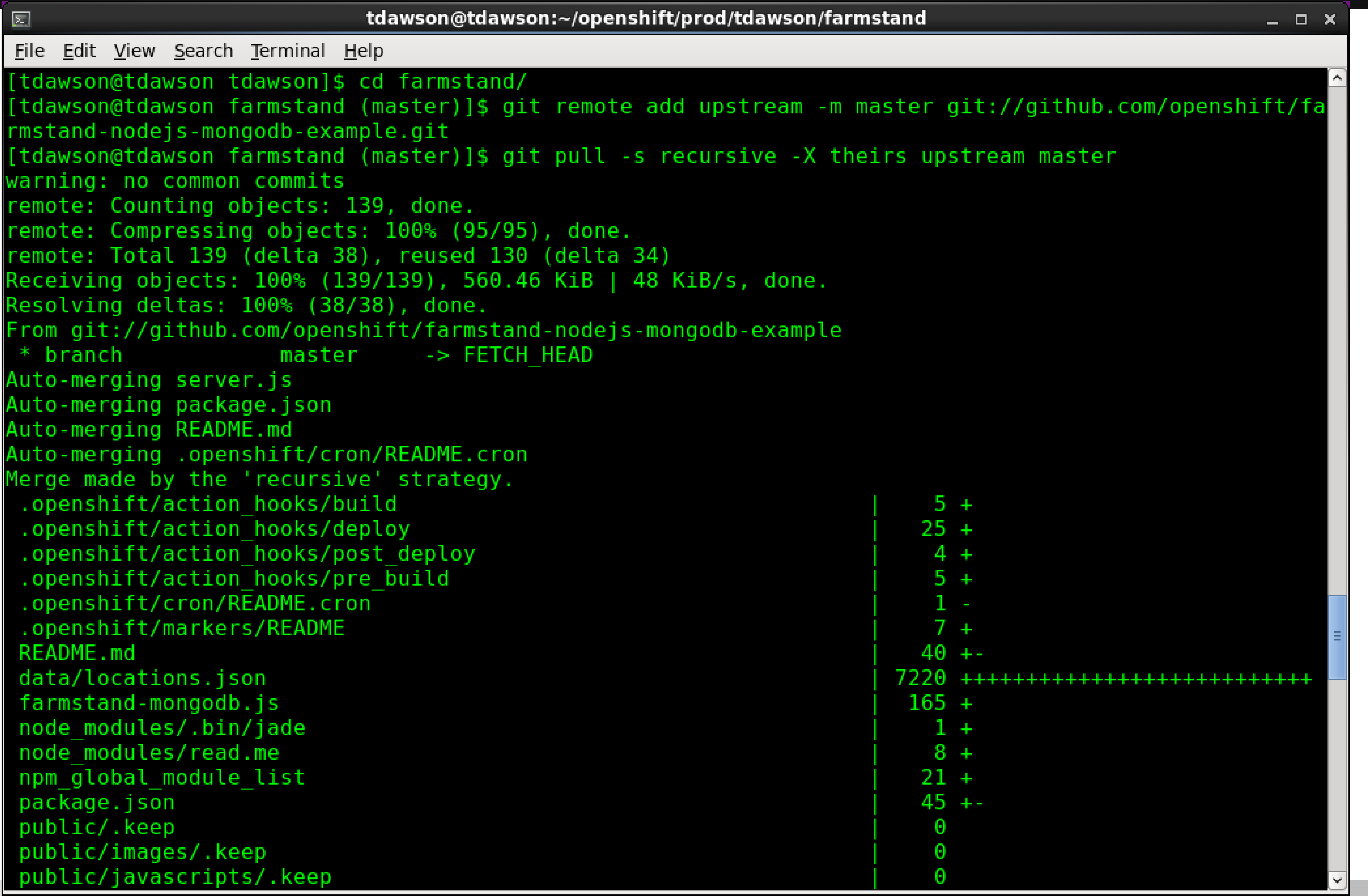
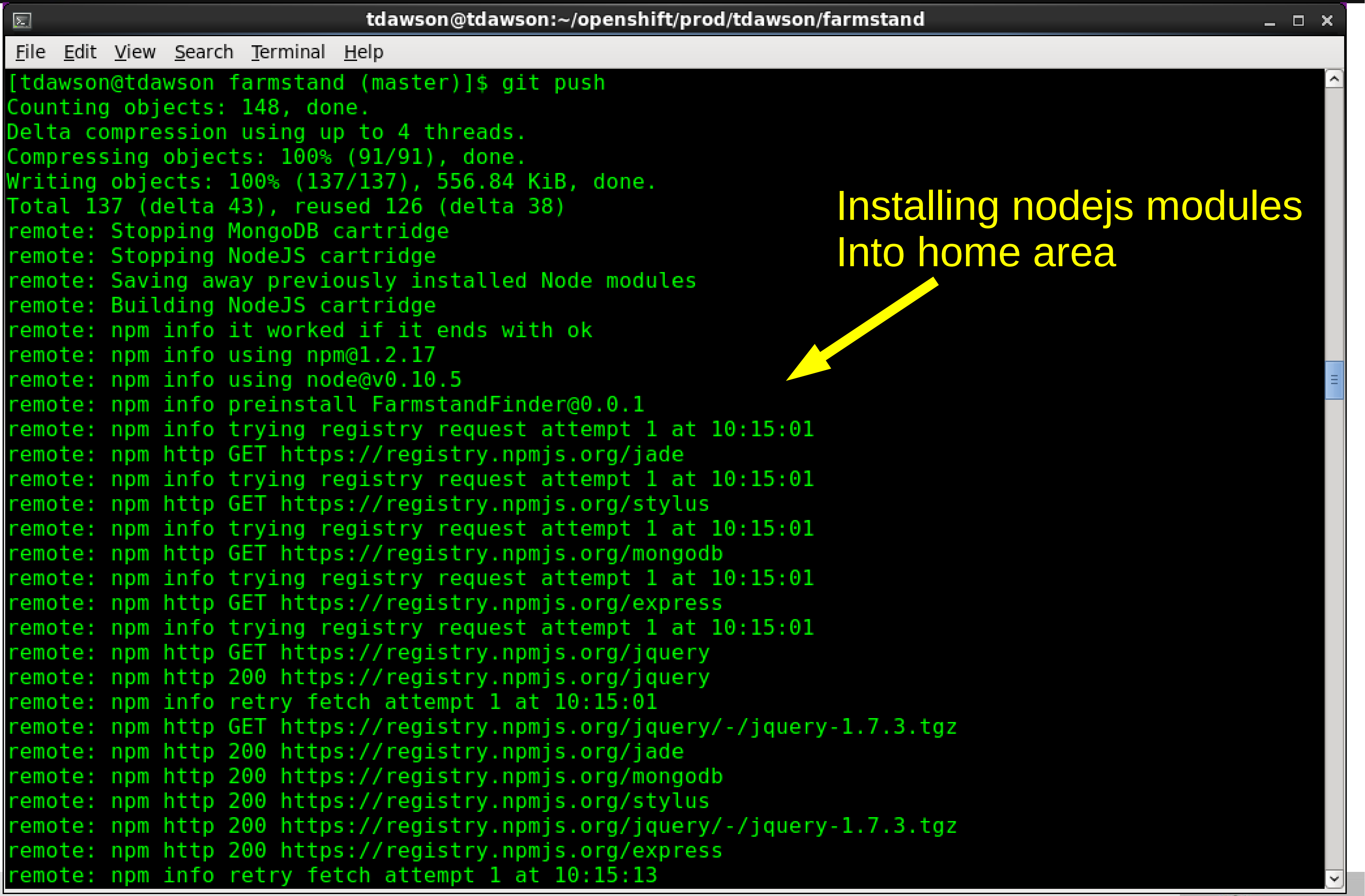

tdawson@tdawson:~/openshift/prod/tdawson/farmstand
File Edit View Search Terminal Help

```
[tdawson@tdawson tdawson]$ cd farmstand/
[tdawson@tdawson farmstand (master)]$ git remote add upstream -m master git://github.com/openshift/fa
rmstand-nodejs-mongodb-example.git
[tdawson@tdawson farmstand (master)]$ git pull -s recursive -X theirs upstream master
warning: no common commits
remote: Counting objects: 139, done.
remote: Compressing objects: 100% (95/95), done.
remote: Total 139 (delta 38), reused 130 (delta 34)
Receiving objects: 100% (139/139), 560.46 KiB | 48 KiB/s, done.
Resolving deltas: 100% (38/38), done.
From git://github.com/openshift/farmstand-nodejs-mongodb-example
 * branch            master     -> FETCH_HEAD
Auto-merging server.js
Auto-merging package.json
Auto-merging README.md
Auto-merging .openshift/cron/README.cron
Merge made by the 'recursive' strategy.
 .openshift/action_hooks/build                                      |    5 +
 .openshift/action_hooks/deploy                                     |   25 +
 .openshift/action_hooks/post_deploy                                |    4 +
 .openshift/action_hooks/pre_build                                  |    5 +
 .openshift/cron/README.cron                                        |    1 -
 .openshift/markers/README                                          |    7 +
 README.md                                                          |   40 +-
 data/locations.json                                                | 7220 +++++++++++++++++++++++++++
 farmstand-mongodb.js                                               |  165 +
 node_modules/.bin/jade                                             |    1 +
 node_modules/read.me                                               |    8 +
 npm_global_module_list                                             |   21 +
 package.json                                                       |   45 +-
 public/.keep                                                       |    0
 public/images/.keep                                                |    0
 public/javascripts/.keep                                           |    0
```

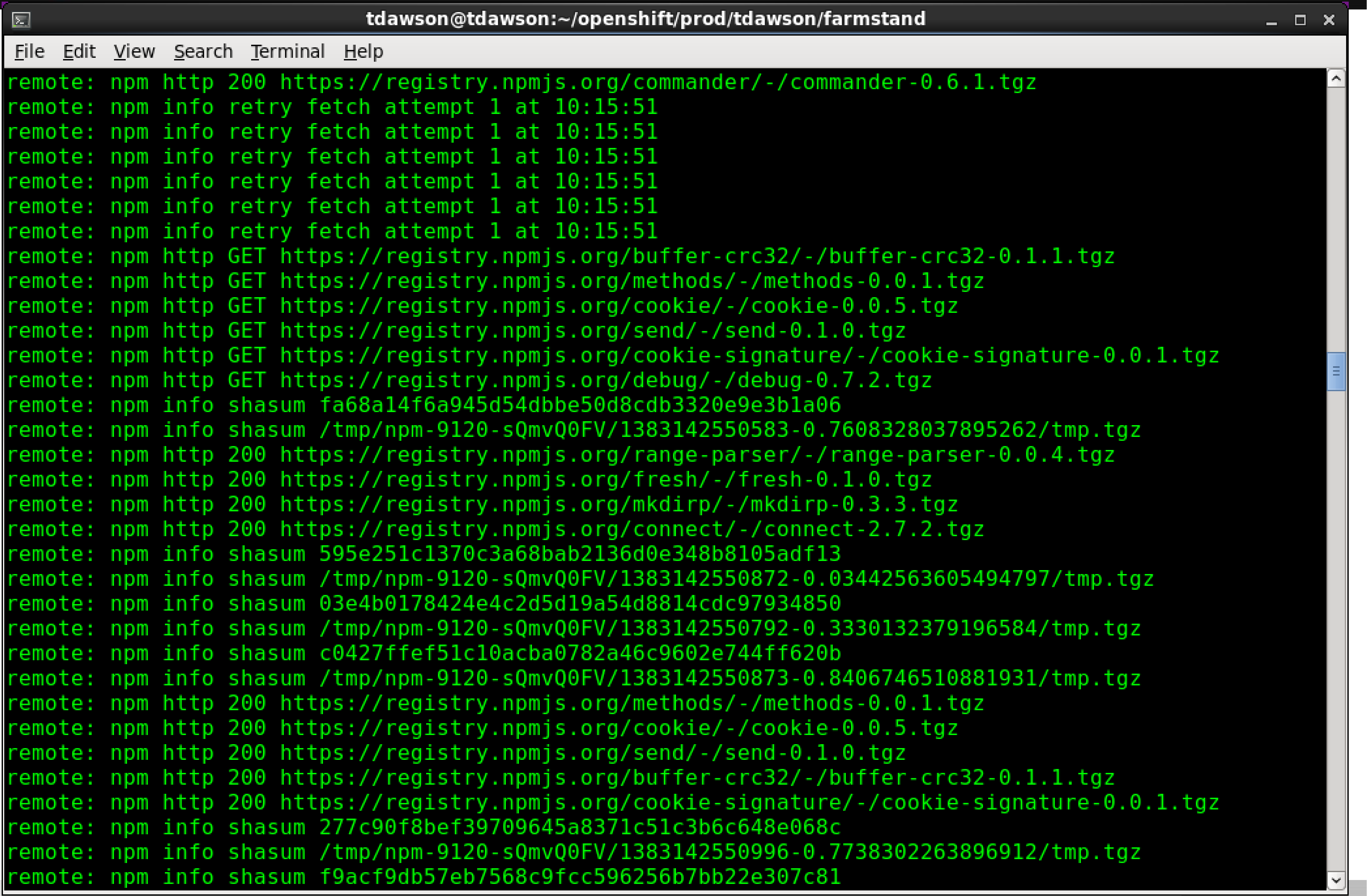
redhat



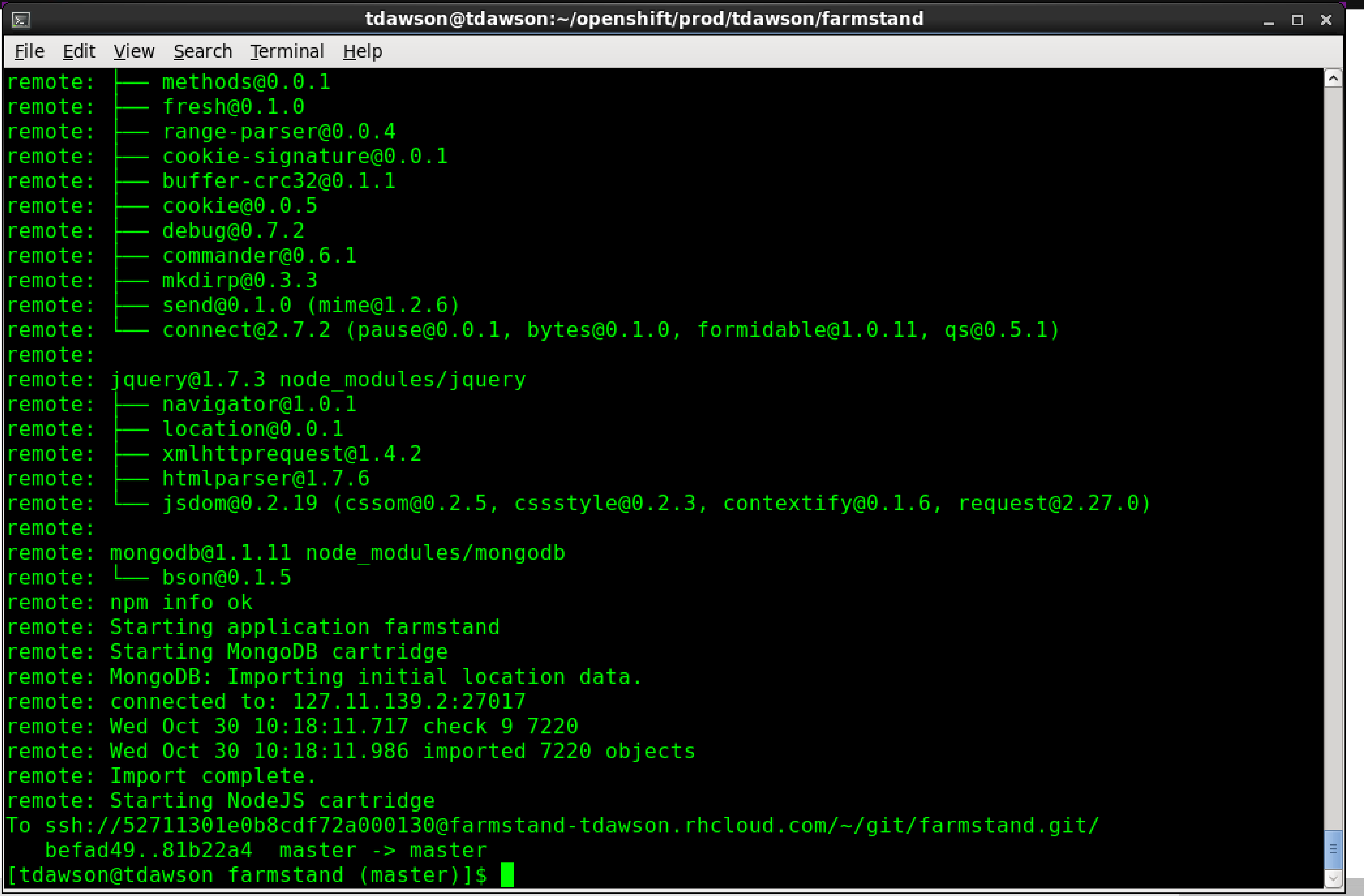
tdawson@tdawson:~/openshift/prod/tdawson/farmstand
File Edit View Search Terminal Help

```
[tdawson@tdawson farmstand (master)]$ git push
Counting objects: 148, done.
Delta compression using up to 4 threads.
Compressing objects: 100% (91/91), done.
Writing objects: 100% (137/137), 556.84 KiB, done.
Total 137 (delta 43), reused 126 (delta 38)
remote: Stopping MongoDB cartridge
remote: Stopping NodeJS cartridge
remote: Saving away previously installed Node modules
remote: Building NodeJS cartridge
remote: npm info it worked if it ends with ok
remote: npm info using npm@1.2.17
remote: npm info using node@v0.10.5
remote: npm info preinstall FarmstandFinder@0.0.1
remote: npm info trying registry request attempt 1 at 10:15:01
remote: npm http GET https://registry.npmjs.org/jade
remote: npm info trying registry request attempt 1 at 10:15:01
remote: npm http GET https://registry.npmjs.org/stylus
remote: npm info trying registry request attempt 1 at 10:15:01
remote: npm http GET https://registry.npmjs.org/mongodb
remote: npm info trying registry request attempt 1 at 10:15:01
remote: npm http GET https://registry.npmjs.org/express
remote: npm info trying registry request attempt 1 at 10:15:01
remote: npm http GET https://registry.npmjs.org/jquery
remote: npm http 200 https://registry.npmjs.org/jquery
remote: npm info retry fetch attempt 1 at 10:15:01
remote: npm http GET https://registry.npmjs.org/jquery/-/jquery-1.7.3.tgz
remote: npm http 200 https://registry.npmjs.org/jade
remote: npm http 200 https://registry.npmjs.org/mongodb
remote: npm http 200 https://registry.npmjs.org/stylus
remote: npm http 200 https://registry.npmjs.org/jquery/-/jquery-1.7.3.tgz
remote: npm http 200 https://registry.npmjs.org/express
remote: npm info retry fetch attempt 1 at 10:15:13
```

Installing nodejs modules
Into home area


tdawson@tdawson:~/openshift/prod/tdawson/farmstand
File Edit View Search Terminal Help

```
remote: npm http 200 https://registry.npmjs.org/commander/-/commander-0.6.1.tgz
remote: npm info retry fetch attempt 1 at 10:15:51
remote: npm info retry fetch attempt 1 at 10:15:51
remote: npm info retry fetch attempt 1 at 10:15:51
remote: npm info retry fetch attempt 1 at 10:15:51
remote: npm info retry fetch attempt 1 at 10:15:51
remote: npm info retry fetch attempt 1 at 10:15:51
remote: npm http GET https://registry.npmjs.org/buffer-crc32/-/buffer-crc32-0.1.1.tgz
remote: npm http GET https://registry.npmjs.org/methods/-/methods-0.0.1.tgz
remote: npm http GET https://registry.npmjs.org/cookie/-/cookie-0.0.5.tgz
remote: npm http GET https://registry.npmjs.org/send/-/send-0.1.0.tgz
remote: npm http GET https://registry.npmjs.org/cookie-signature/-/cookie-signature-0.0.1.tgz
remote: npm http GET https://registry.npmjs.org/debug/-/debug-0.7.2.tgz
remote: npm info shasum fa68a14f6a945d54dbbe50d8cdb3320e9e3b1a06
remote: npm info shasum /tmp/npm-9120-sQmvQ0FV/1383142550583-0.7608328037895262/tmp.tgz
remote: npm http 200 https://registry.npmjs.org/range-parser/-/range-parser-0.0.4.tgz
remote: npm http 200 https://registry.npmjs.org/fresh/-/fresh-0.1.0.tgz
remote: npm http 200 https://registry.npmjs.org/mkdirp/-/mkdirp-0.3.3.tgz
remote: npm http 200 https://registry.npmjs.org/connect/-/connect-2.7.2.tgz
remote: npm info shasum 595e251c1370c3a68bab2136d0e348b8105adf13
remote: npm info shasum /tmp/npm-9120-sQmvQ0FV/1383142550872-0.03442563605494797/tmp.tgz
remote: npm info shasum 03e4b0178424e4c2d5d19a54d8814cdc97934850
remote: npm info shasum /tmp/npm-9120-sQmvQ0FV/1383142550792-0.3330132379196584/tmp.tgz
remote: npm info shasum c0427ffef51c10acba0782a46c9602e744ff620b
remote: npm info shasum /tmp/npm-9120-sQmvQ0FV/1383142550873-0.8406746510881931/tmp.tgz
remote: npm http 200 https://registry.npmjs.org/methods/-/methods-0.0.1.tgz
remote: npm http 200 https://registry.npmjs.org/cookie/-/cookie-0.0.5.tgz
remote: npm http 200 https://registry.npmjs.org/send/-/send-0.1.0.tgz
remote: npm http 200 https://registry.npmjs.org/buffer-crc32/-/buffer-crc32-0.1.1.tgz
remote: npm http 200 https://registry.npmjs.org/cookie-signature/-/cookie-signature-0.0.1.tgz
remote: npm info shasum 277c90f8bef39709645a8371c51c3b6c648e068c
remote: npm info shasum /tmp/npm-9120-sQmvQ0FV/1383142550996-0.7738302263896912/tmp.tgz
remote: npm info shasum f9acf9db57eb7568c9fcc596256b7bb22e307c81
```


tdawson@tdawson:~/openshift/prod/tdawson/farmstand
File Edit View Search Terminal Help

```
remote: ├── methods@0.0.1
remote: ├── fresh@0.1.0
remote: ├── range-parser@0.0.4
remote: ├── cookie-signature@0.0.1
remote: ├── buffer-crc32@0.1.1
remote: ├── cookie@0.0.5
remote: ├── debug@0.7.2
remote: ├── commander@0.6.1
remote: ├── mkdirp@0.3.3
remote: ├── send@0.1.0 (mime@1.2.6)
remote: └── connect@2.7.2 (pause@0.0.1, bytes@0.1.0, formidable@1.0.11, qs@0.5.1)
remote:
remote: jquery@1.7.3 node_modules/jquery
remote: ├── navigator@1.0.1
remote: ├── location@0.0.1
remote: ├── xmlhttprequest@1.4.2
remote: ├── htmlparser@1.7.6
remote: └── jsdom@0.2.19 (cssom@0.2.5, cssstyle@0.2.3, contextify@0.1.6, request@2.27.0)
remote:
remote: mongodb@1.1.11 node_modules/mongodb
remote: └── bson@0.1.5
remote: npm info ok
remote: Starting application farmstand
remote: Starting MongoDB cartridge
remote: MongoDB: Importing initial location data.
remote: connected to: 127.11.139.2:27017
remote: Wed Oct 30 10:18:11.717 check 9 7220
remote: Wed Oct 30 10:18:11.986 imported 7220 objects
remote: Import complete.
remote: Starting NodeJS cartridge
To ssh://52711301e0b8cdf72a000130@farmstand-tdawson.rhcloud.com/~/git/farmstand.git/
   befad49..81b22a4  master -> master
[tdawson@tdawson farmstand (master)]$ 
```

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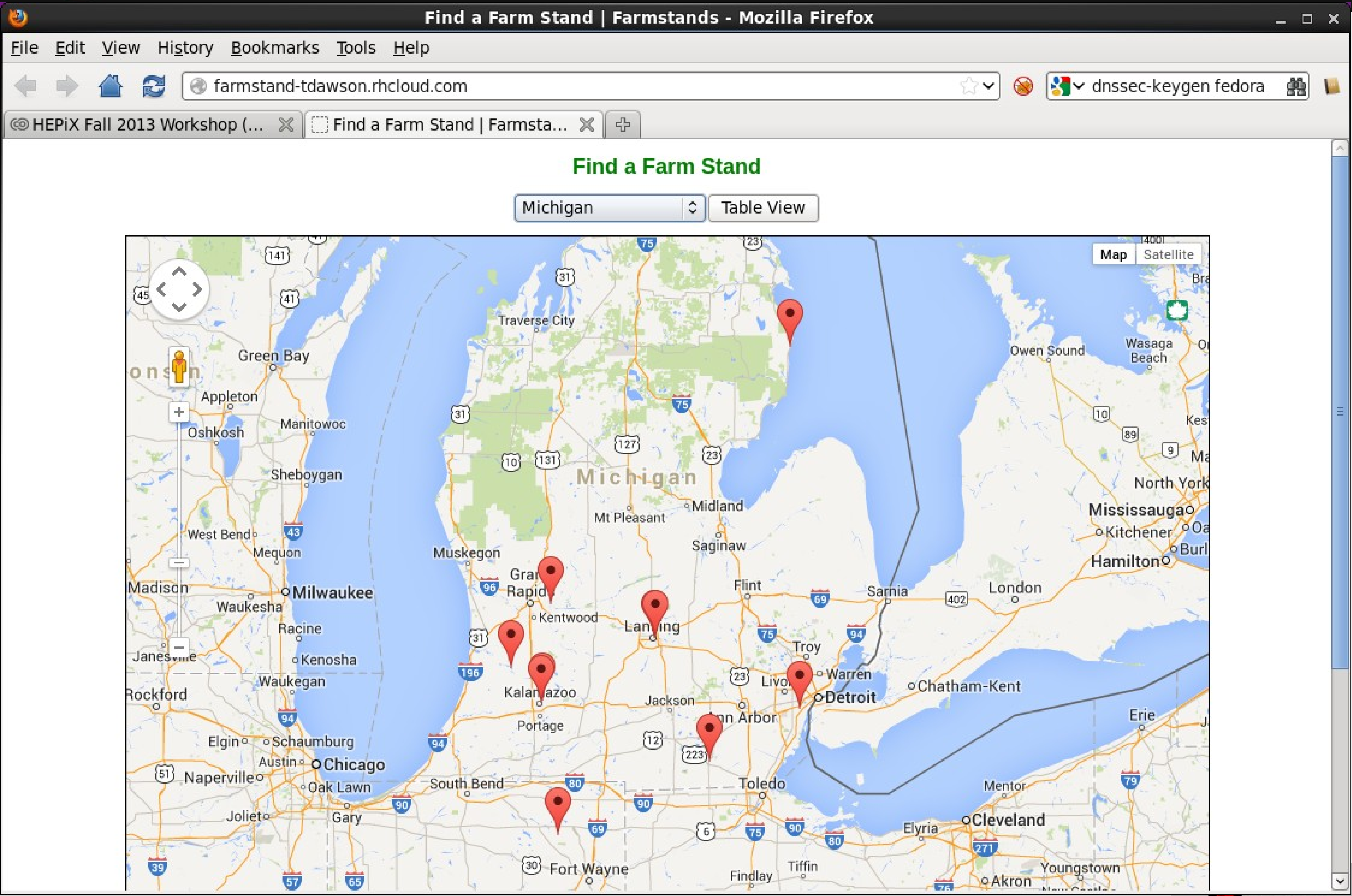
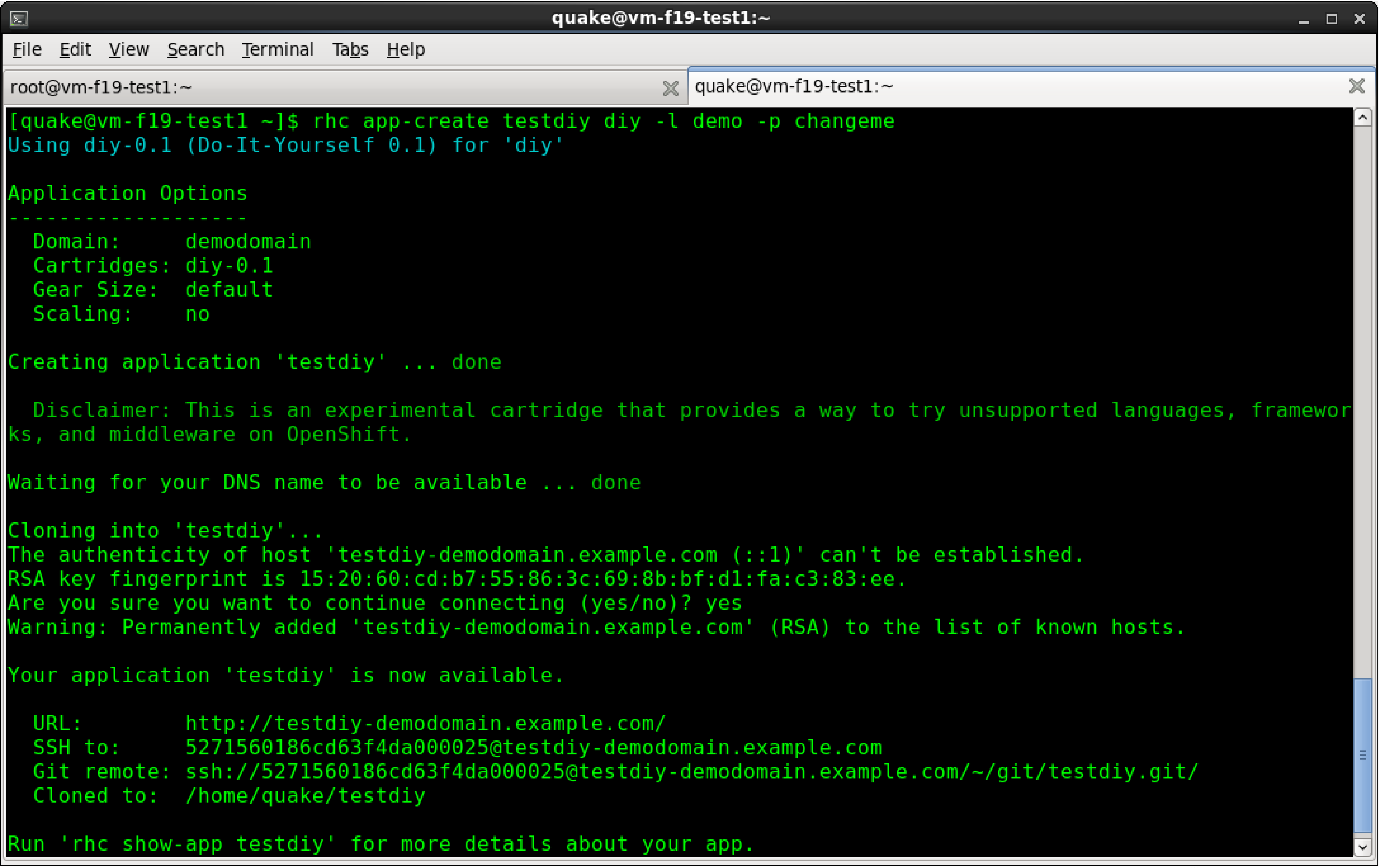


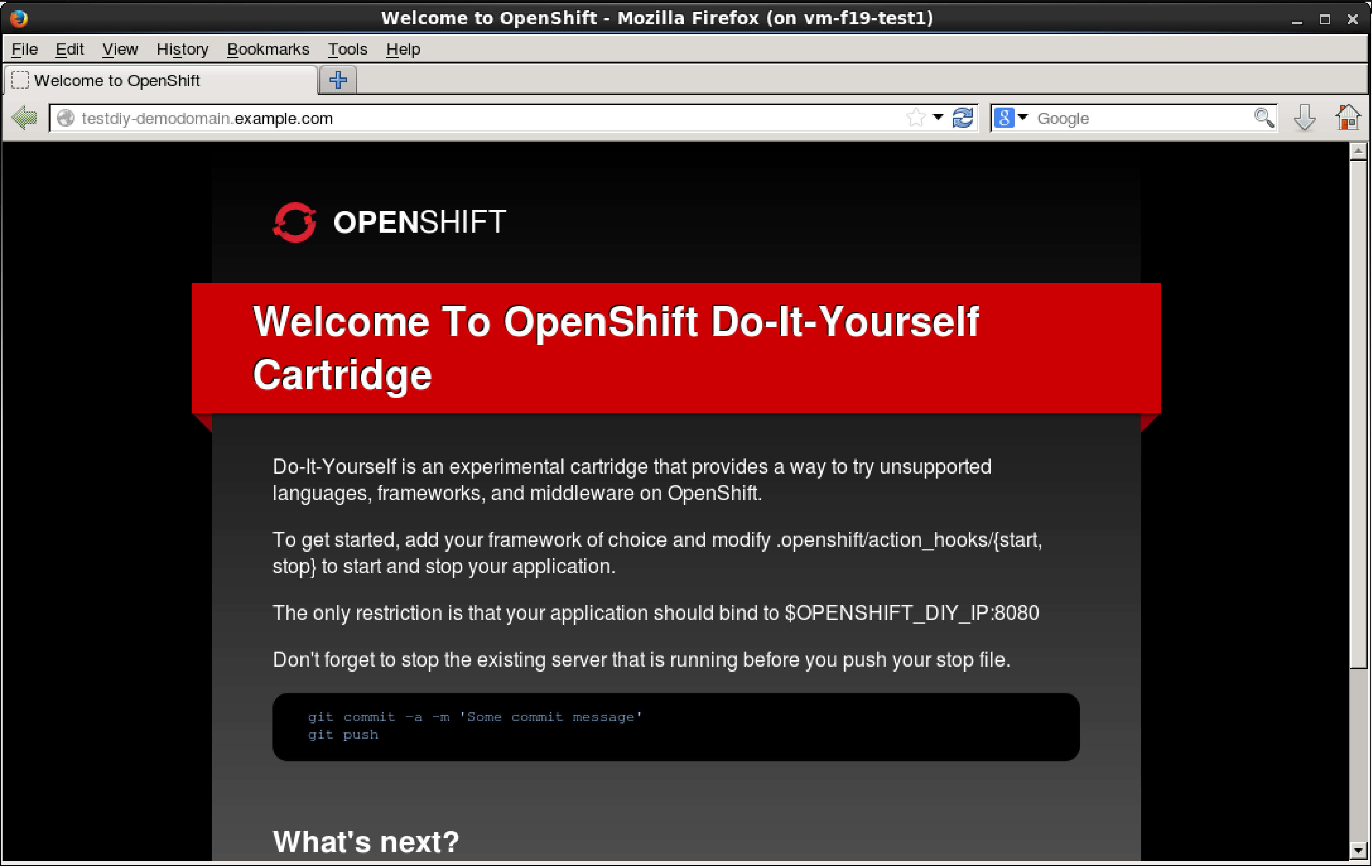
redhat.

Second Demo (OpenShift Origin, local VM)

1. Steps done before we started the demo
   - Setup OpenShift Origin locally
   - Created a cartridge designed for an experiment
   - Installed the cartridge onto our OpenShift Origin
2. Show we can make apps on our Origin instance.
3. List what cartridges are available.
   - Note: We now have an experiment cartridge
4. Build an app using the experiment cartridge
5. Look at experiment default page
   - This is on my local machine, not publicly available.



```
[quake@vm-f19-test1 ~]$ rhc app-create testdiy diy -l demo -p changeme
Using diy-0.1 (Do-It-Yourself 0.1) for 'diy'

Application Options
-------------------
  Domain:     demodomain
  Cartridges: diy-0.1
  Gear Size:  default
  Scaling:    no

Creating application 'testdiy' ... done

  Disclaimer: This is an experimental cartridge that provides a way to try unsupported languages, framewor
ks, and middleware on OpenShift.

Waiting for your DNS name to be available ... done

Cloning into 'testdiy'...
The authenticity of host 'testdiy-demodomain.example.com (::1)' can't be established.
RSA key fingerprint is 15:20:60:cd:b7:55:86:3c:69:8b:bf:d1:fa:c3:83:ee.
Are you sure you want to continue connecting (yes/no)? yes
Warning: Permanently added 'testdiy-demodomain.example.com' (RSA) to the list of known hosts.

Your application 'testdiy' is now available.

  URL:        http://testdiy-demodomain.example.com/
  SSH to:     5271560186cd63f4da000025@testdiy-demodomain.example.com
  Git remote: ssh://5271560186cd63f4da000025@testdiy-demodomain.example.com/~/git/testdiy.git/
  Cloned to:  /home/quake/testdiy

Run 'rhc show-app testdiy' for more details about your app.
```


Welcome to OpenShift - Mozilla Firefox (on vm-f19-test1)
File Edit View History Bookmarks Tools Help
Welcome to OpenShift
testdiy-demodomain.example.com
Google
OPENSHIFT

Welcome To OpenShift Do-It-Yourself Cartridge

Do-It-Yourself is an experimental cartridge that provides a way to try unsupported languages, frameworks, and middleware on OpenShift.

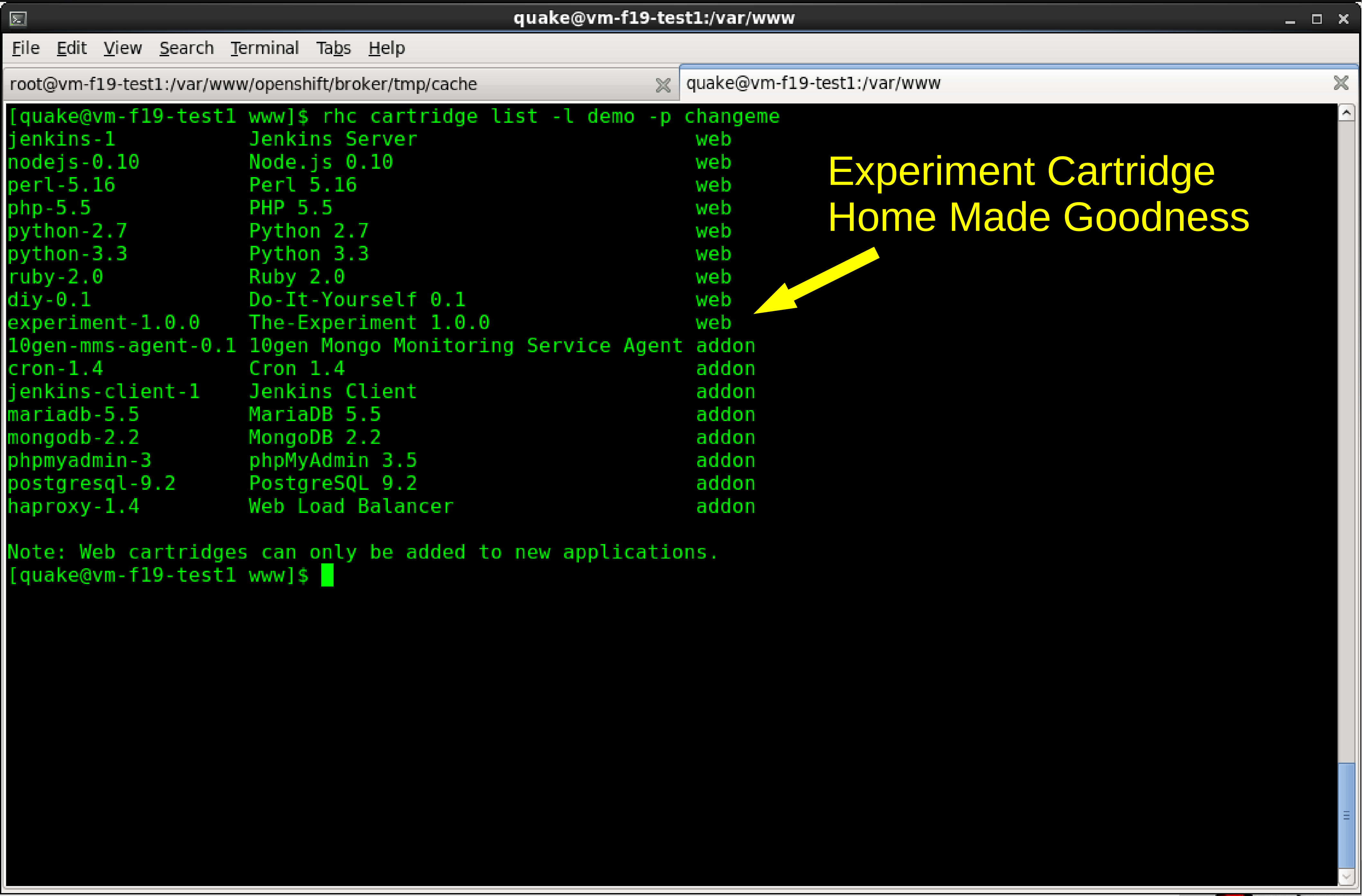
To get started, add your framework of choice and modify .openshift/action_hooks/{start, stop} to start and stop your application.

The only restriction is that your application should bind to $OPENSHIFT_DIY_IP:8080

Don't forget to stop the existing server that is running before you push your stop file.

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

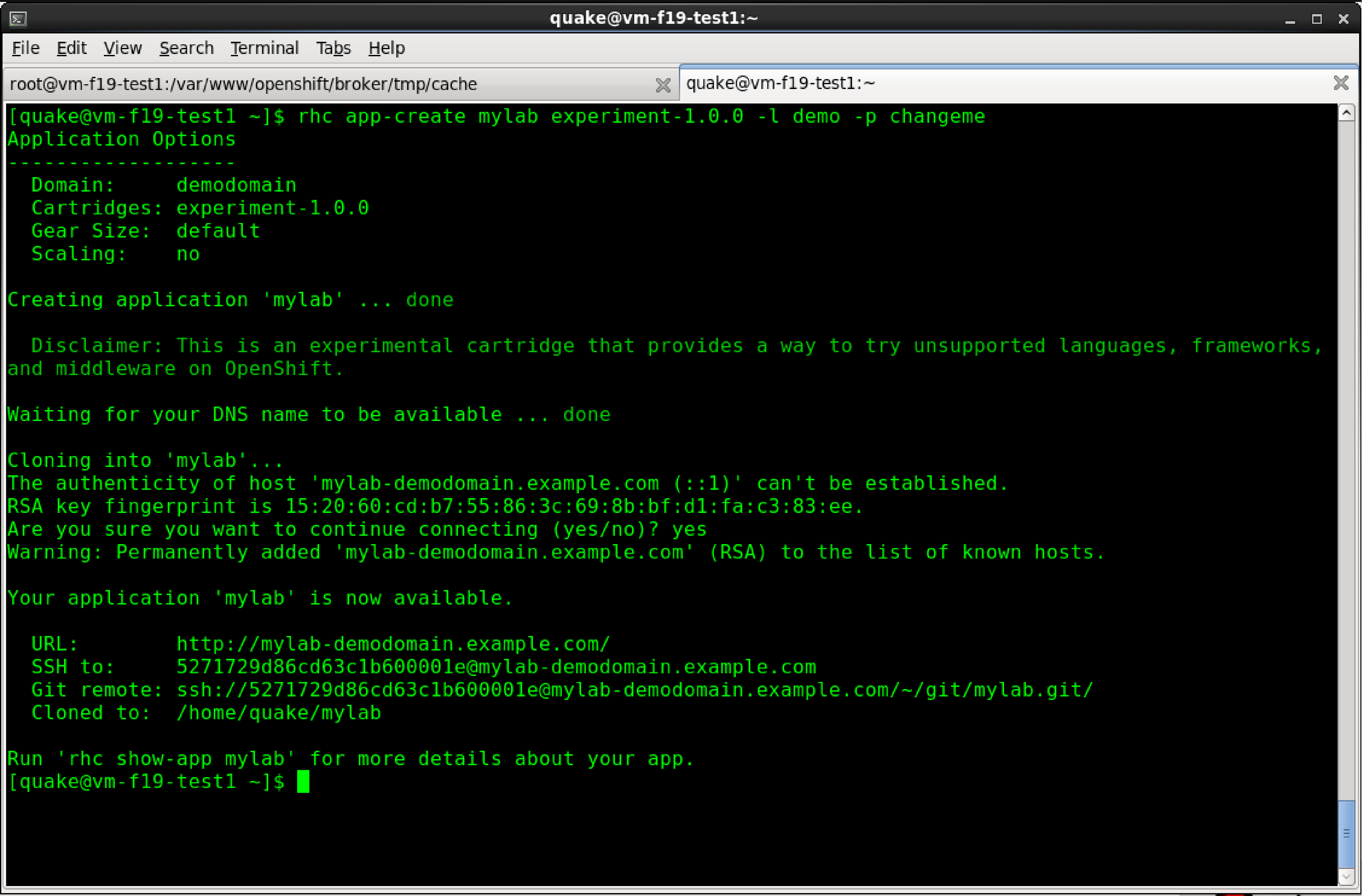
What's next?



quake@vm-f19-test1:/var/www
File Edit View Search Terminal Tabs Help
root@vm-f19-test1:/var/www/openshift/broker/tmp/cache
quake@vm-f19-test1:/var/www

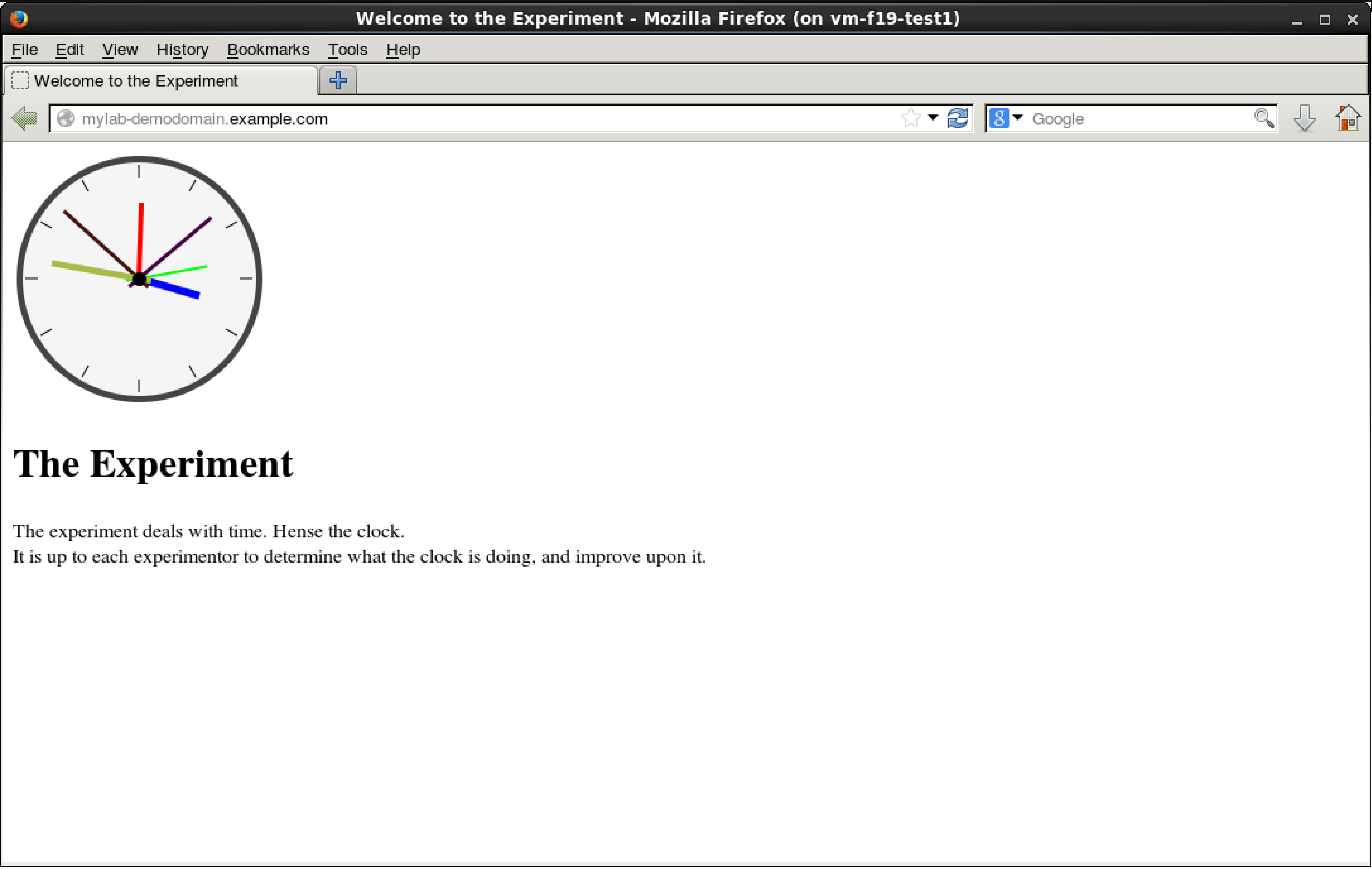
```
[quake@vm-f19-test1 www]$ rhc cartridge list -l demo -p changeme
jenkins-1           Jenkins Server                     web
nodejs-0.10         Node.js 0.10                       web
perl-5.16           Perl 5.16                          web
php-5.5             PHP 5.5                            web
python-2.7          Python 2.7                         web
python-3.3          Python 3.3                         web
ruby-2.0            Ruby 2.0                           web
diy-0.1             Do-It-Yourself 0.1                 web
experiment-1.0.0    The-Experiment 1.0.0               web
10gen-mms-agent-0.1 10gen Mongo Monitoring Service Agent addon
cron-1.4            Cron 1.4                           addon
jenkins-client-1    Jenkins Client                     addon
mariadb-5.5         MariaDB 5.5                        addon
mongodb-2.2         MongoDB 2.2                        addon
phpmyadmin-3        phpMyAdmin 3.5                     addon
postgresql-9.2      PostgreSQL 9.2                     addon
haproxy-1.4         Web Load Balancer                  addon

Note: Web cartridges can only be added to new applications.
[quake@vm-f19-test1 www]$
```

Experiment Cartridge
Home Made Goodness



quake@vm-f19-test1:~
File Edit View Search Terminal Tabs Help
root@vm-f19-test1:/var/www/openshift/broker/tmp/cache
quake@vm-f19-test1:~

```
[quake@vm-f19-test1 ~]$ rhc app-create mylab experiment-1.0.0 -l demo -p changeme
Application Options
-------------------
  Domain:     demodomain
  Cartridges: experiment-1.0.0
  Gear Size:  default
  Scaling:    no

Creating application 'mylab' ... done

  Disclaimer: This is an experimental cartridge that provides a way to try unsupported languages, frameworks,
and middleware on OpenShift.

Waiting for your DNS name to be available ... done

Cloning into 'mylab'...
The authenticity of host 'mylab-demodomain.example.com (::1)' can't be established.
RSA key fingerprint is 15:20:60:cd:b7:55:86:3c:69:8b:bf:d1:fa:c3:83:ee.
Are you sure you want to continue connecting (yes/no)? yes
Warning: Permanently added 'mylab-demodomain.example.com' (RSA) to the list of known hosts.

Your application 'mylab' is now available.

  URL:        http://mylab-demodomain.example.com/
  SSH to:     5271729d86cd63c1b600001e@mylab-demodomain.example.com
  Git remote: ssh://5271729d86cd63c1b600001e@mylab-demodomain.example.com/~/git/mylab.git/
  Cloned to:  /home/quake/mylab

Run 'rhc show-app mylab' for more details about your app.
[quake@vm-f19-test1 ~]$ 
```

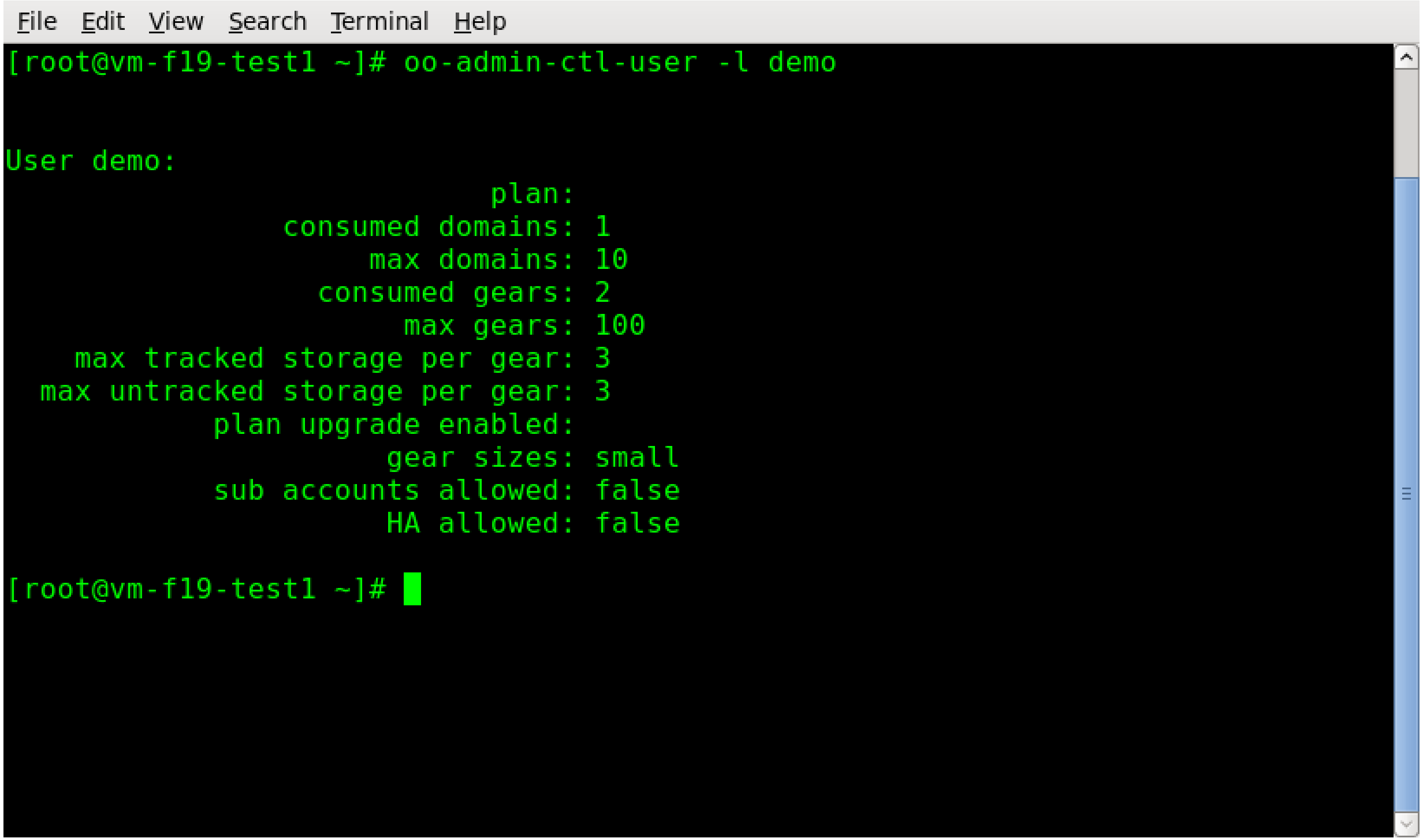

Welcome to the Experiment - Mozilla Firefox (on vm-f19-test1)
File
Edit
View
History
Bookmarks
Tools
Help
Welcome to the Experiment
mylab-demodomain.example.com
Google

The Experiment

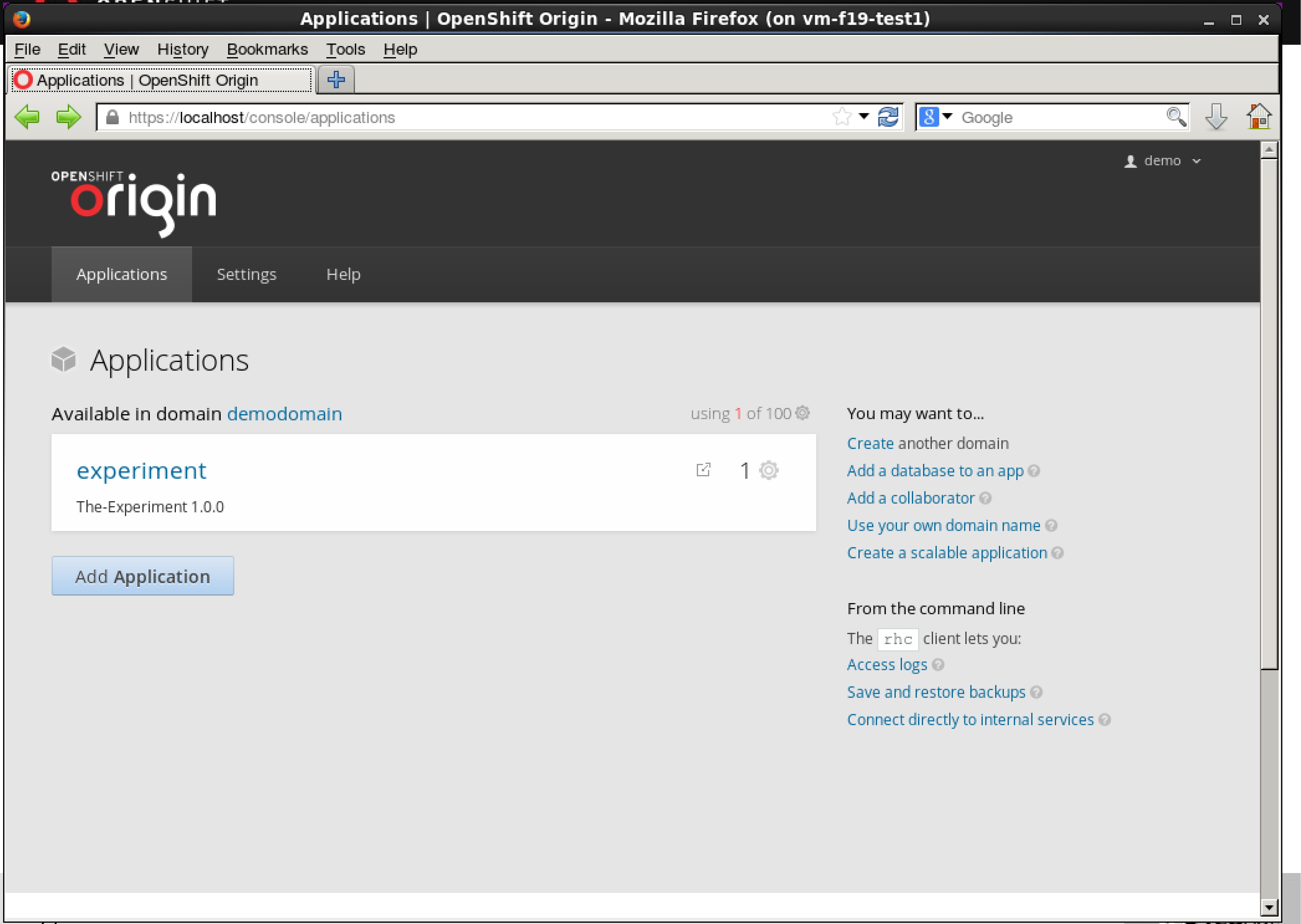
The experiment deals with time. Hense the clock.
It is up to each experimentor to determine what the clock is doing, and improve upon it.

Third Demo (OpenShift Origin, local VM)

1. Ensure the user can expand their quota.
2. Show how the user can use the web client to
   - Create a scalable app
   - Modify scalable settings after created
   - Change quota on a per app basis



```
[root@vm-f19-test1 ~]# oo-admin-ctl-user -l demo


User demo:
                                plan:
                    consumed domains: 1
                         max domains: 10
                      consumed gears: 2
                           max gears: 100
     max tracked storage per gear: 3
   max untracked storage per gear: 3
                plan upgrade enabled:
                          gear sizes: small
                sub accounts allowed: false
                          HA allowed: false

[root@vm-f19-test1 ~]# 
```


Applications | OpenShift Origin - Mozilla Firefox (on vm-f19-test1)
File
Edit
View
History
Bookmarks
Tools
Help
Applications | OpenShift Origin
https://localhost/console/applications
Google
demo
OPENSHIFT origin
Applications
Settings
Help

Applications

Available in domain demodomain

using 1 of 100

experiment

The-Experiment 1.0.0

1

Add Application

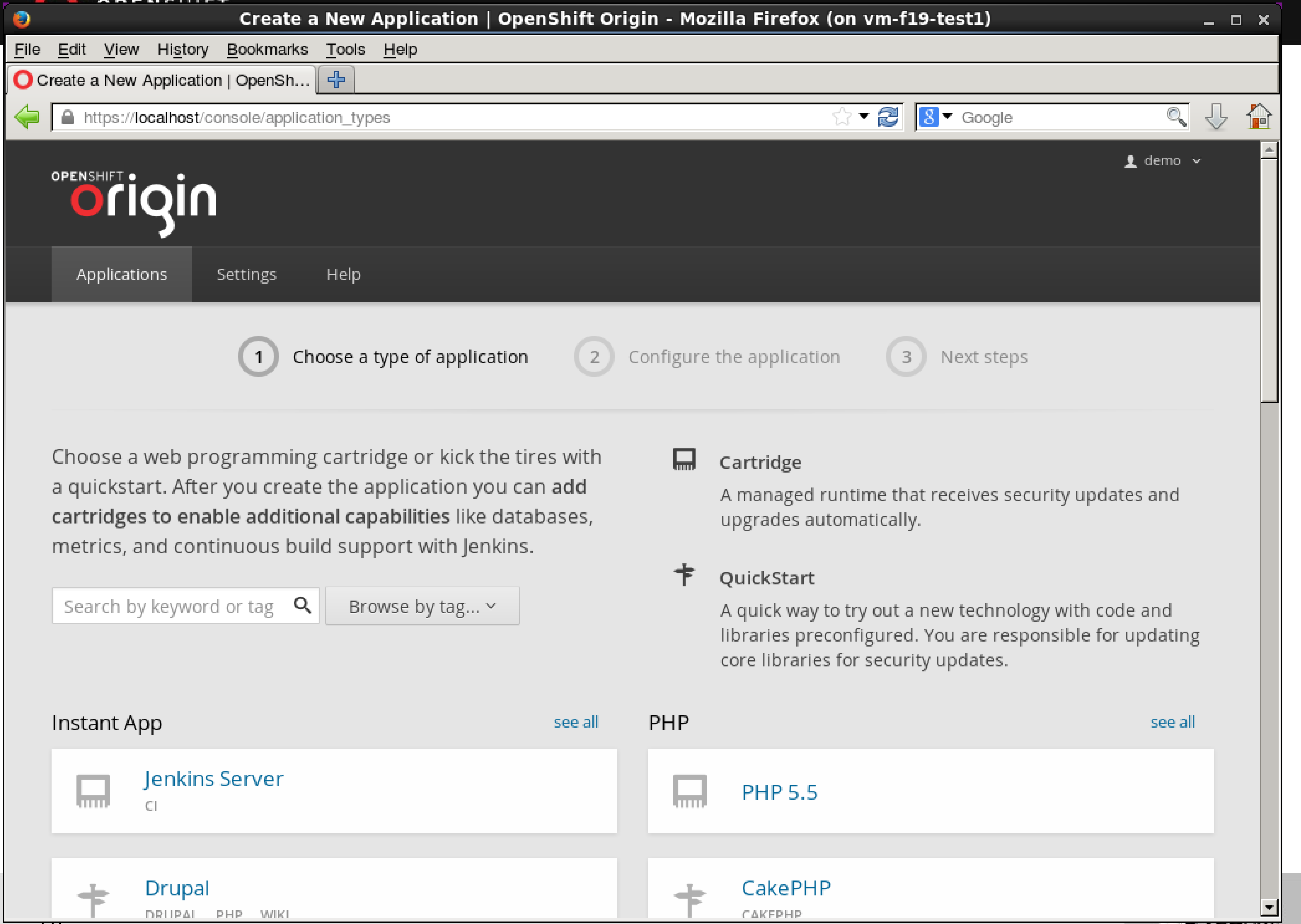
You may want to...

- Create another domain
- Add a database to an app
- Add a collaborator
- Use your own domain name
- Create a scalable application

From the command line

The `rhc` client lets you:

- Access logs
- Save and restore backups
- Connect directly to internal services



Create a New Application | OpenShift Origin - Mozilla Firefox (on vm-f19-test1)
File Edit View History Bookmarks Tools Help
Create a New Application | OpenSh...
https://localhost/console/application_types
Google
demo
OPENSHIFT origin
Applications
Settings
Help

1 Choose a type of application

2 Configure the application

3 Next steps

Choose a web programming cartridge or kick the tires with a quickstart. After you create the application you can **add cartridges to enable additional capabilities** like databases, metrics, and continuous build support with Jenkins.

Search by keyword or tag
Browse by tag...

Cartridge

A managed runtime that receives security updates and upgrades automatically.

QuickStart

A quick way to try out a new technology with code and libraries preconfigured. You are responsible for updating core libraries for security updates.

Instant App

see all

Jenkins Server

CI

Drupal

DRUPAL PHP WIKI

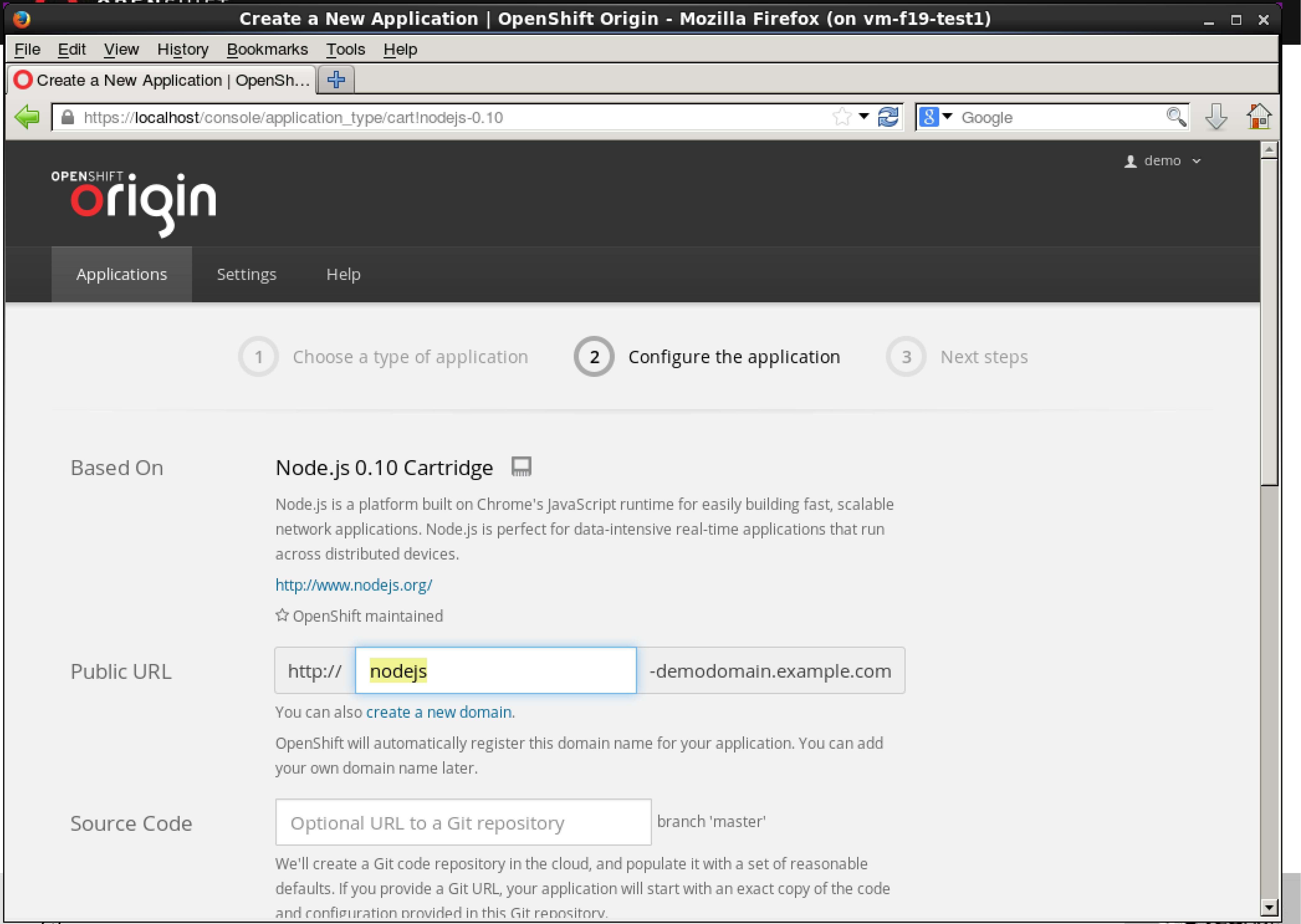
PHP

see all

PHP 5.5

CakePHP

CAKEPHP


Create a New Application | OpenShift Origin - Mozilla Firefox (on vm-f19-test1)
File
Edit
View
History
Bookmarks
Tools
Help
Create a New Application | OpenSh...
https://localhost/console/application_type/cart!nodejs-0.10
Google
OPENSHIFT origin
demo
Applications
Settings
Help

1 Choose a type of application

2 Configure the application

3 Next steps

Based On

Node.js 0.10 Cartridge

Node.js is a platform built on Chrome's JavaScript runtime for easily building fast, scalable network applications. Node.js is perfect for data-intensive real-time applications that run across distributed devices.

http://www.nodejs.org/

☆ OpenShift maintained

Public URL

http:// nodejs -demodomain.example.com

You can also create a new domain.

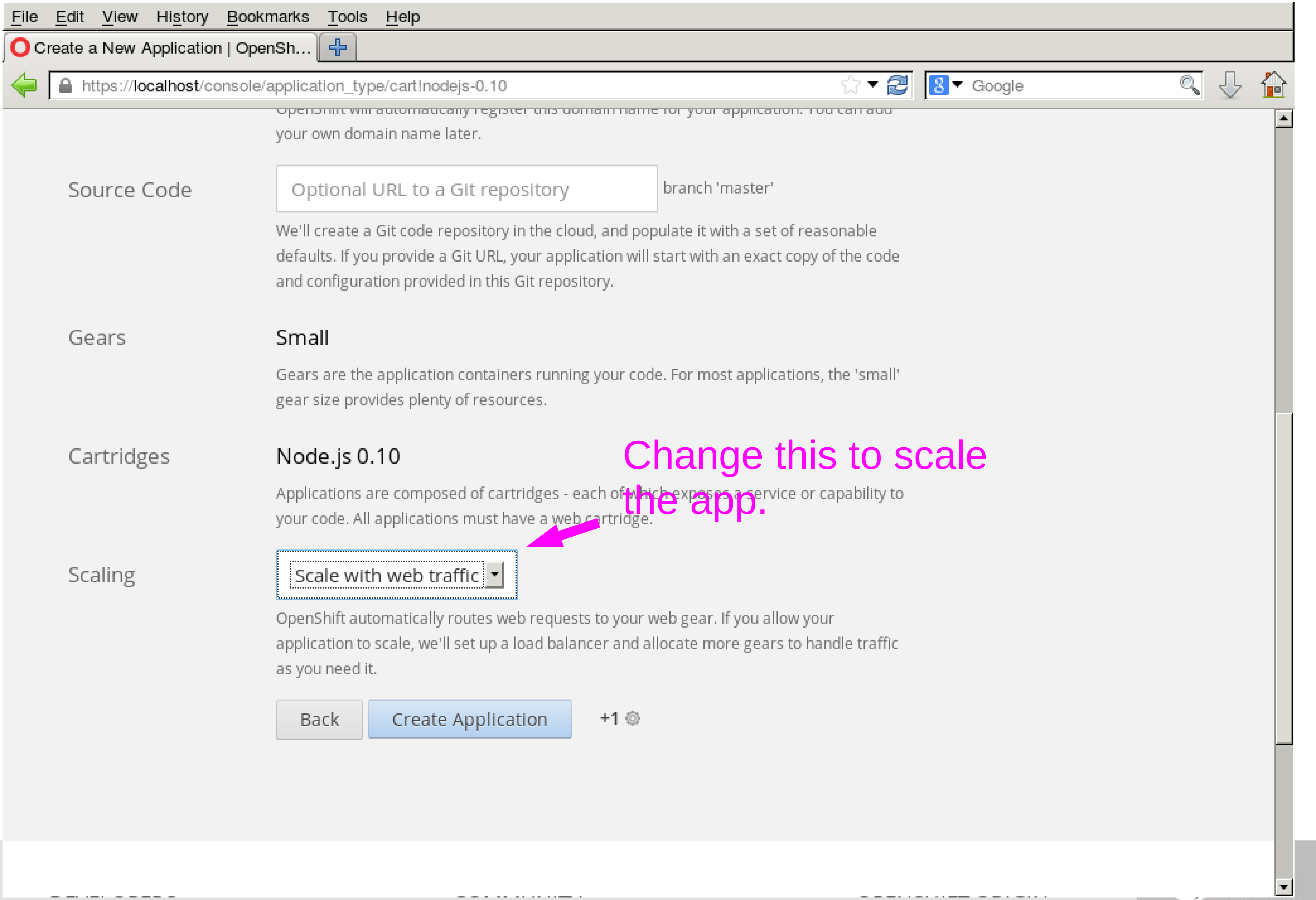
OpenShift will automatically register this domain name for your application. You can add your own domain name later.

Source Code

Optional URL to a Git repository branch 'master'

We'll create a Git code repository in the cloud, and populate it with a set of reasonable defaults. If you provide a Git URL, your application will start with an exact copy of the code and configuration provided in this Git repository.

OPENSHIFT


File Edit View History Bookmarks Tools Help
Create a New Application | OpenSh...
https://localhost/console/application_type/cart!nodejs-0.10
Google

OpenShift will automatically register this domain name for your application. You can add your own domain name later.

Source Code: Optional URL to a Git repository branch 'master'

We'll create a Git code repository in the cloud, and populate it with a set of reasonable defaults. If you provide a Git URL, your application will start with an exact copy of the code and configuration provided in this Git repository.

Gears: Small

Gears are the application containers running your code. For most applications, the 'small' gear size provides plenty of resources.

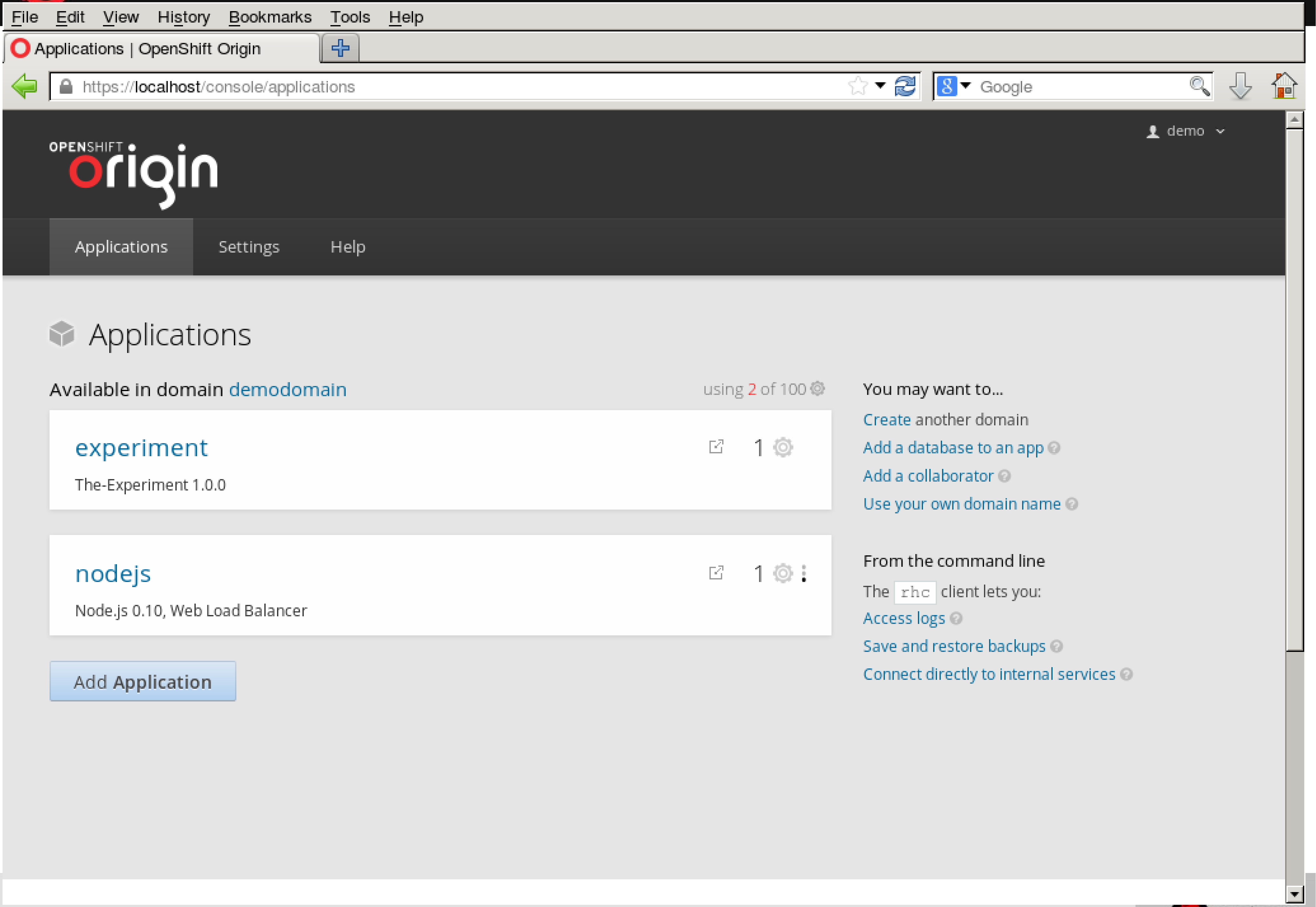
Cartridges: Node.js 0.10

Applications are composed of cartridges - each of which exposes a service or capability to your code. All applications must have a web cartridge.

Scaling: Scale with web traffic

OpenShift automatically routes web requests to your web gear. If you allow your application to scale, we'll set up a load balancer and allocate more gears to handle traffic as you need it.

Change this to scale the app.



File Edit View History Bookmarks Tools Help
Applications | OpenShift Origin
https://localhost/console/applications
Google
demo
OPENSHIFT origin
Applications
Settings
Help

Applications

Available in domain demodomain

using 2 of 100

experiment 1

The-Experiment 1.0.0

nodejs 1

Node.js 0.10, Web Load Balancer

Add Application

You may want to...

Create another domain

Add a database to an app

Add a collaborator

Use your own domain name

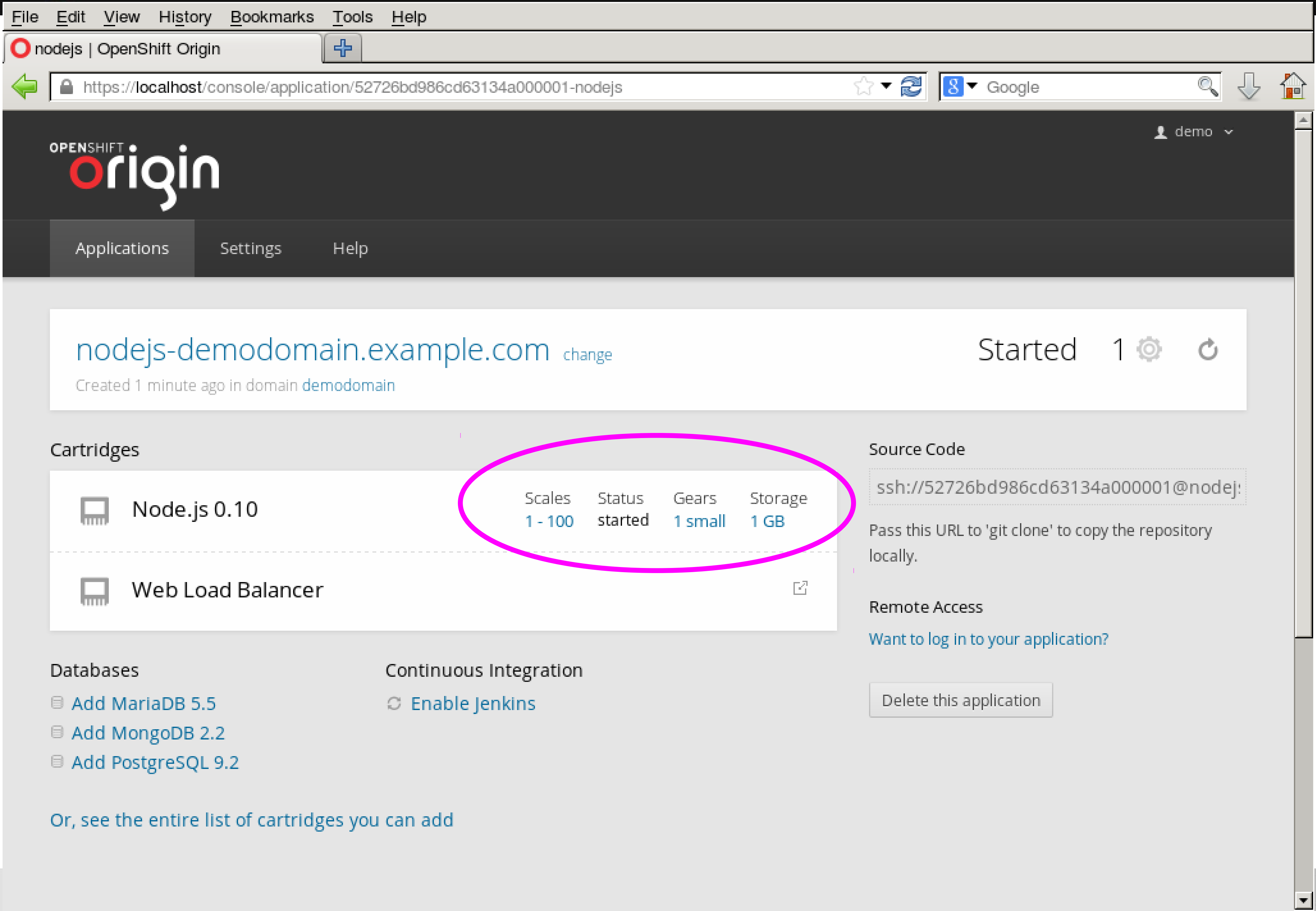
From the command line

The `rhc` client lets you:

Access logs

Save and restore backups

Connect directly to internal services



https://localhost/console/application/52726bd986cd63134a000001-nodejs

nodejs-demodomain.example.com change

Created 1 minute ago in domain demodomain

Started 1

Cartridges

Node.js 0.10

Scales	Status	Gears	Storage
1 - 100	started	1 small	1 GB

Web Load Balancer

Databases

- Add MariaDB 5.5
- Add MongoDB 2.2
- Add PostgreSQL 9.2

Continuous Integration

Enable Jenkins

Or, see the entire list of cartridges you can add

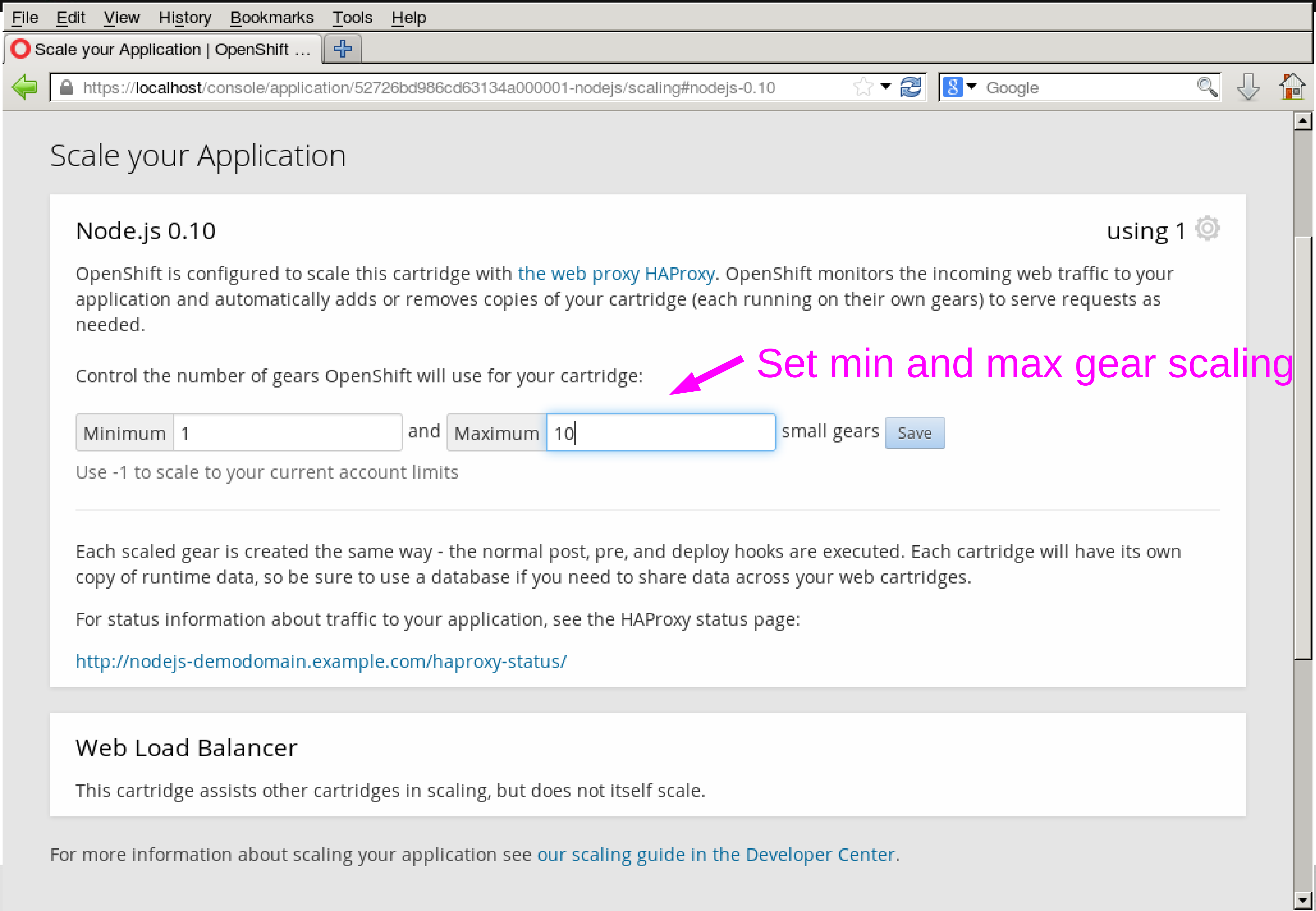
Source Code

ssh://52726bd986cd63134a000001@nodej:

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

Remote Access

Want to log in to your application?


File Edit View History Bookmarks Tools Help
Scale your Application | OpenShift …
https://localhost/console/application/52726bd986cd63134a000001-nodejs/scaling#nodejs-0.10
Google

Scale your Application

Node.js 0.10

using 1

OpenShift is configured to scale this cartridge with the web proxy HAProxy. OpenShift monitors the incoming web traffic to your application and automatically adds or removes copies of your cartridge (each running on their own gears) to serve requests as needed.

Control the number of gears OpenShift will use for your cartridge:

Set min and max gear scaling

Minimum 1 and Maximum 10 small gears Save

Use -1 to scale to your current account limits

Each scaled gear is created the same way - the normal post, pre, and deploy hooks are executed. Each cartridge will have its own copy of runtime data, so be sure to use a database if you need to share data across your web cartridges.

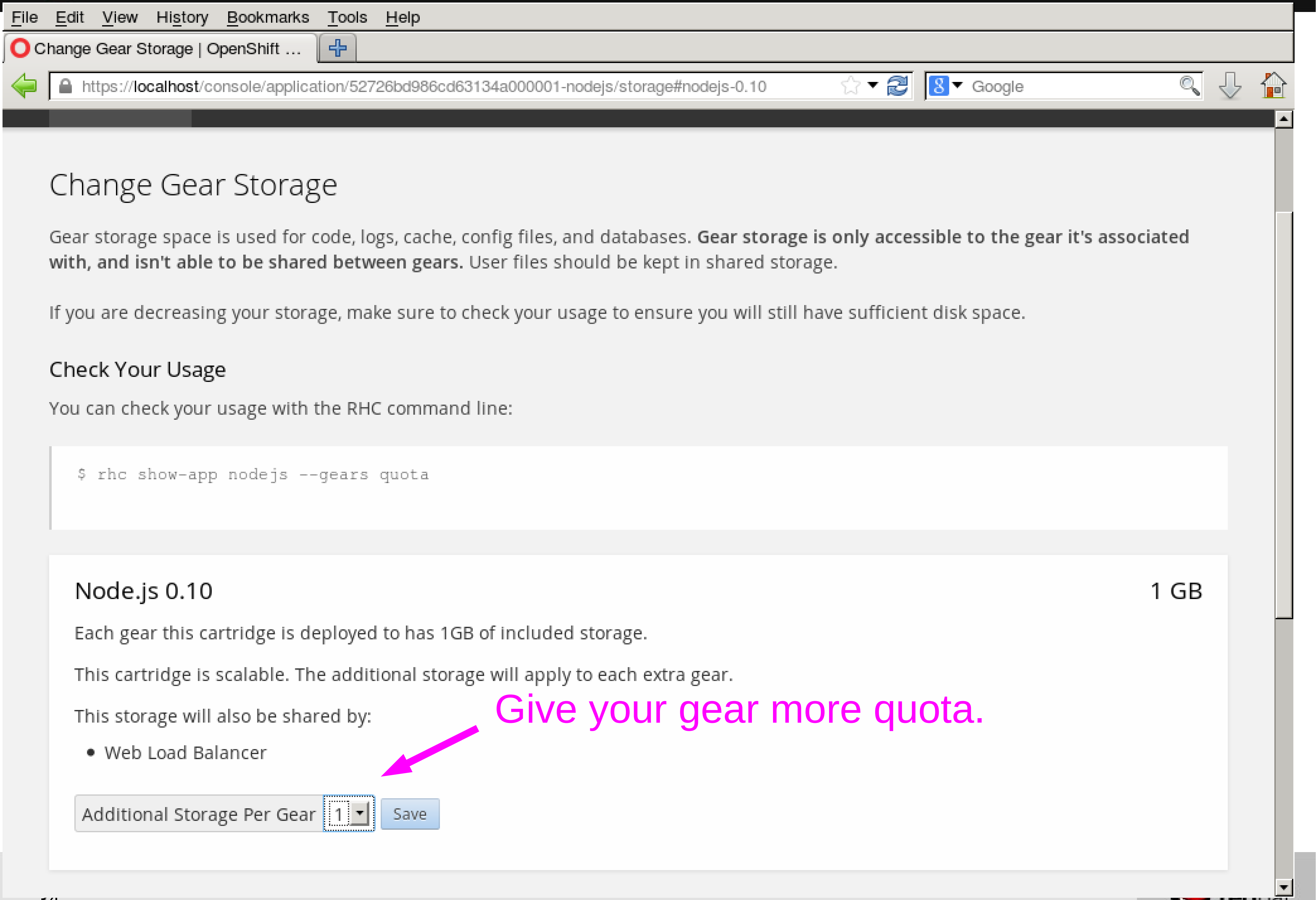
For status information about traffic to your application, see the HAProxy status page:

http://nodejs-demodomain.example.com/haproxy-status/

Web Load Balancer

This cartridge assists other cartridges in scaling, but does not itself scale.

For more information about scaling your application see our scaling guide in the Developer Center.



File
Edit
View
History
Bookmarks
Tools
Help
Change Gear Storage | OpenShift ...
https://localhost/console/application/52726bd986cd63134a000001-nodejs/storage#nodejs-0.10
Google

Change Gear Storage

Gear storage space is used for code, logs, cache, config files, and databases. **Gear storage is only accessible to the gear it's associated with, and isn't able to be shared between gears.** User files should be kept in shared storage.

If you are decreasing your storage, make sure to check your usage to ensure you will still have sufficient disk space.

Check Your Usage

You can check your usage with the RHC command line:

```
$ rhc show-app nodejs --gears quota
```

Node.js 0.10

1 GB

Each gear this cartridge is deployed to has 1GB of included storage.

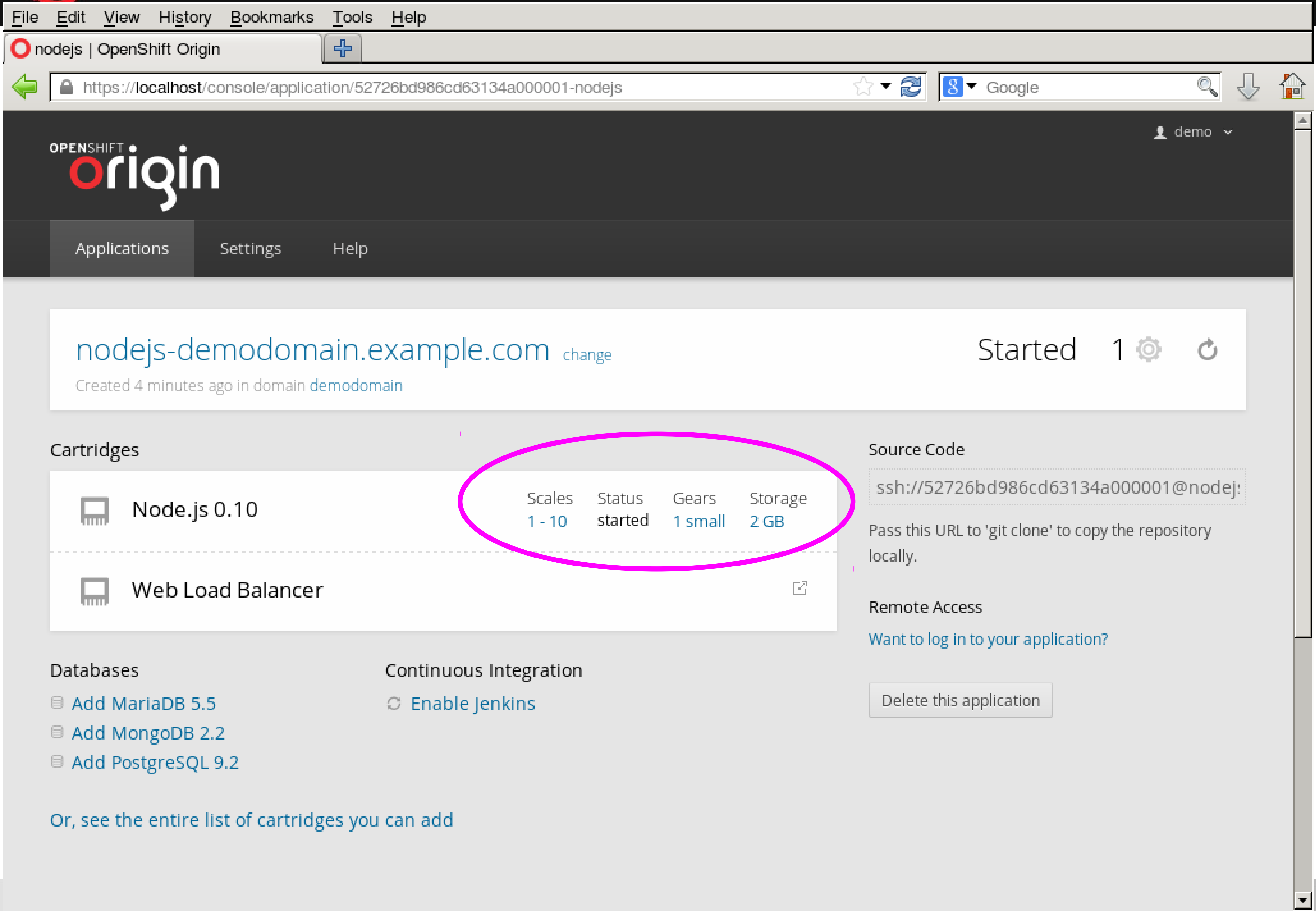
This cartridge is scalable. The additional storage will apply to each extra gear.

This storage will also be shared by:

- Web Load Balancer

Additional Storage Per Gear: 1

Give your gear more quota.



File Edit View History Bookmarks Tools Help
nodejs | OpenShift Origin
https://localhost/console/application/52726bd986cd63134a000001-nodejs
Google
demo
OPENSHIFT origin
Applications
Settings
Help

nodejs-demodomain.example.com change

Created 4 minutes ago in domain demodomain

Started 1

Cartridges

	Scales	Status	Gears	Storage
Node.js 0.10	1 - 10	started	1 small	2 GB
Web Load Balancer				

Databases

- Add MariaDB 5.5
- Add MongoDB 2.2
- Add PostgreSQL 9.2

Continuous Integration

- Enable Jenkins

Or, see the entire list of cartridges you can add

Source Code

ssh://52726bd986cd63134a000001@nodej

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

Remote Access

Want to log in to your application?

How does this all work?

KEY TERMS

- Broker – Management host, orchestration of Nodes
- Node – Compute host containing Gears
- App – Your Application. An app contains one or more gears, that contain one or more cartridges.
- Gear – Allocation of fixed memory, compute, and storage resources for running applications
- Cartridge – A technology/framework (PHP, Perl, Node.js, Ruby, Python, MySQL, etc.) to build applications

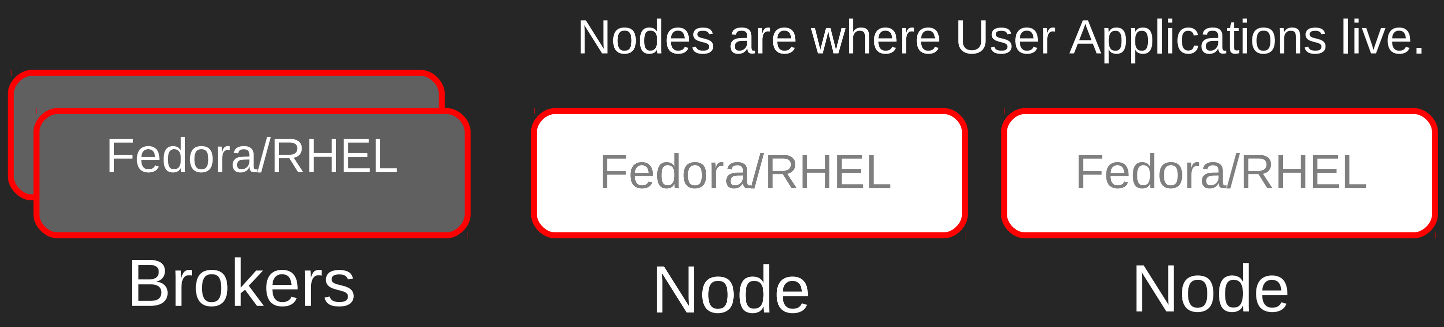
SERVER TYPES

Each OpenShift Origin server will be one of the following types:

- Broker Host
- Node Host

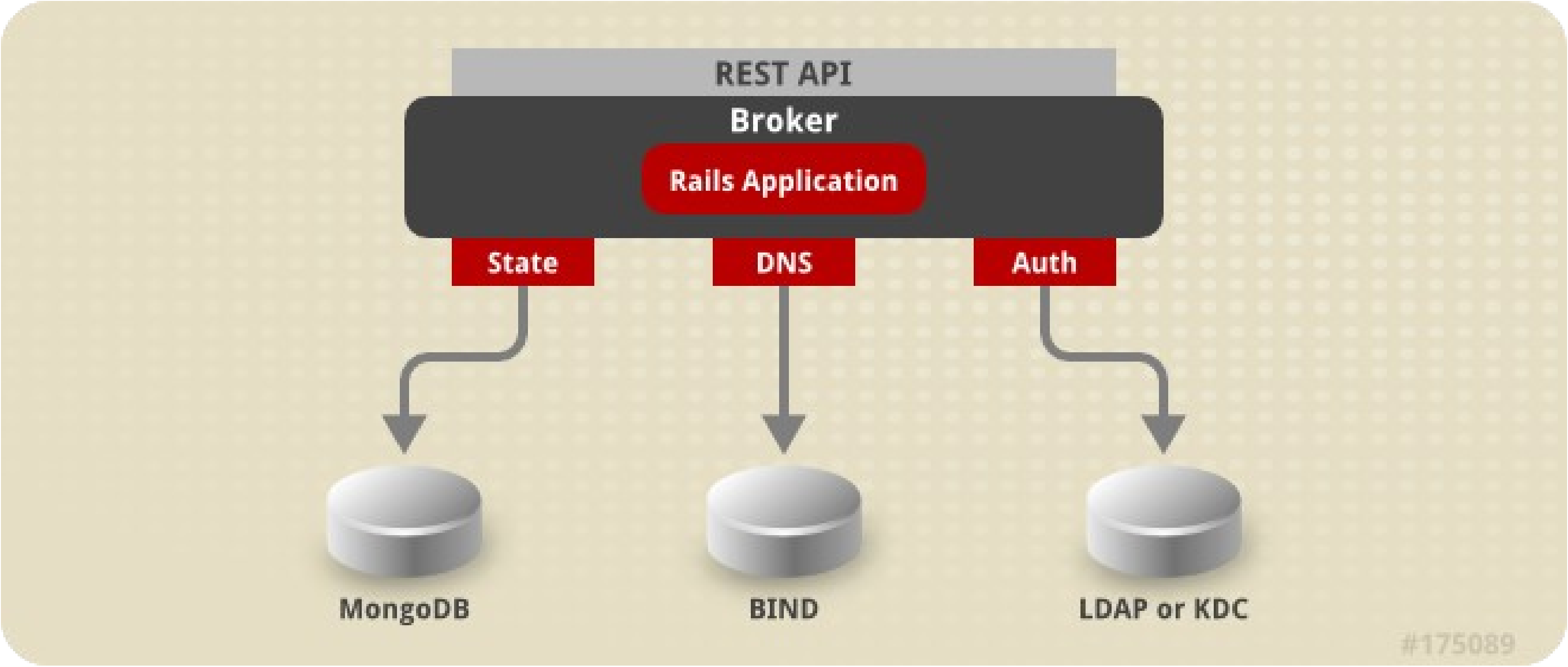
BROKER

An OpenShift Broker can manage multiple node hosts.



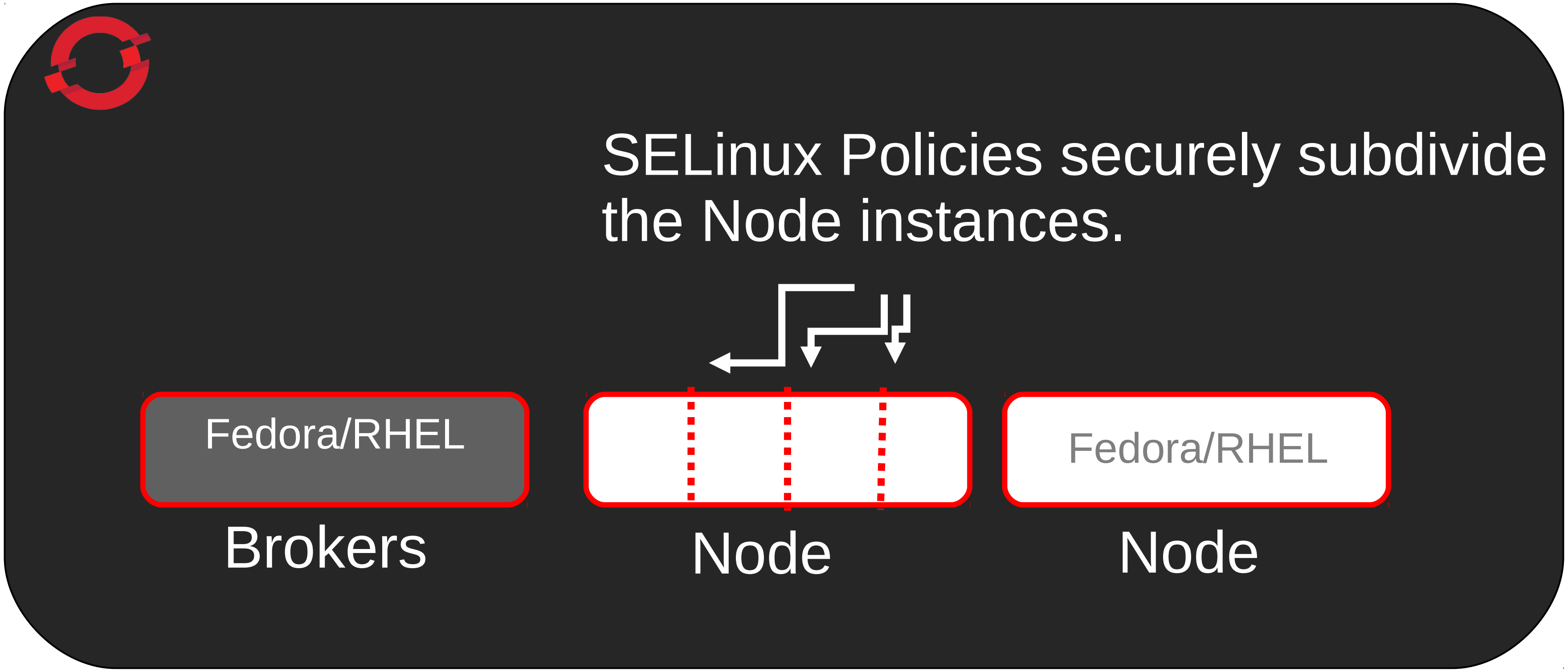
BROKER

The Broker is responsible for state, DNS, and authentication.

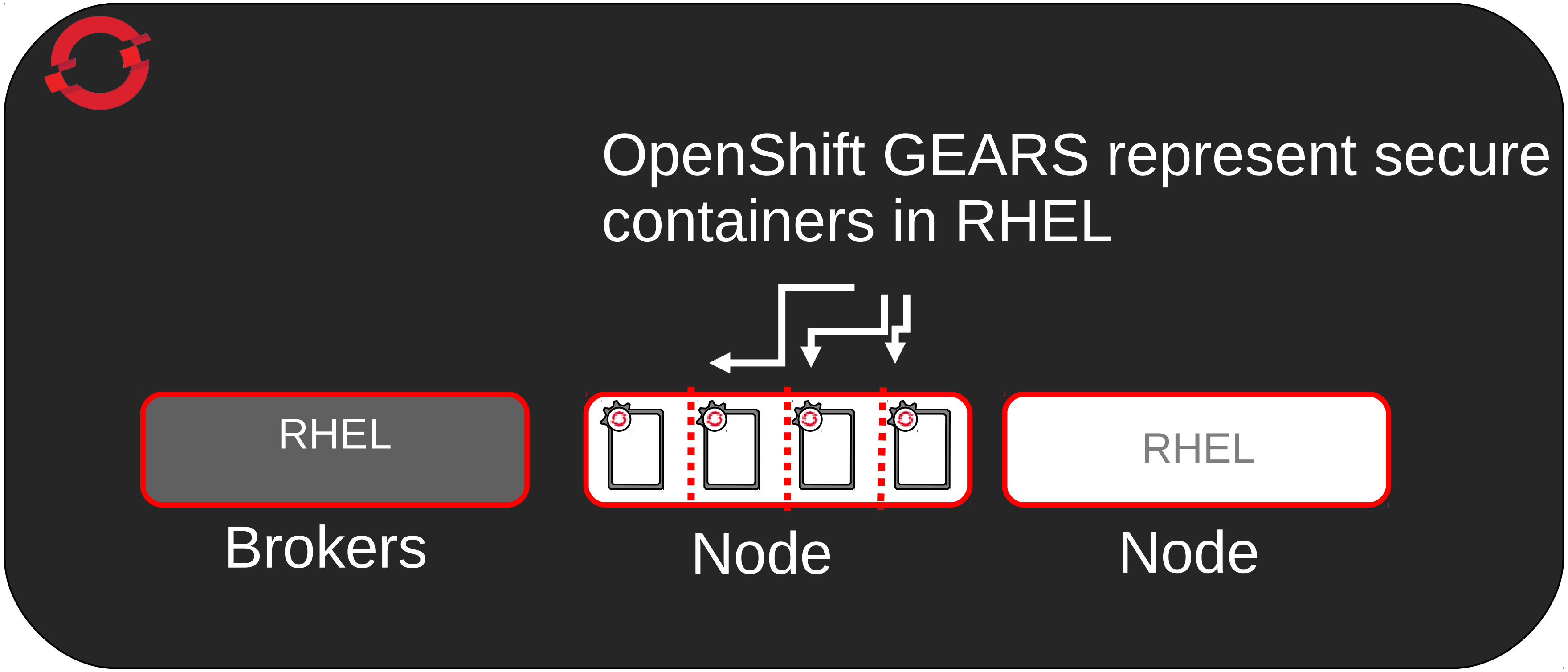


SELINUX

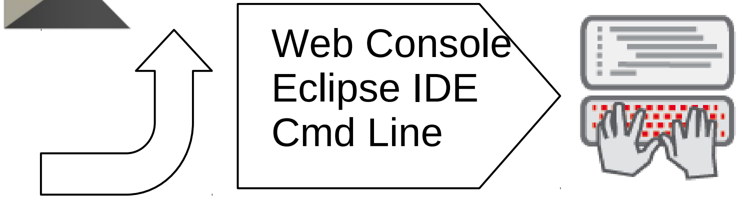
SELinux Policies securely subdivide the Node instances.

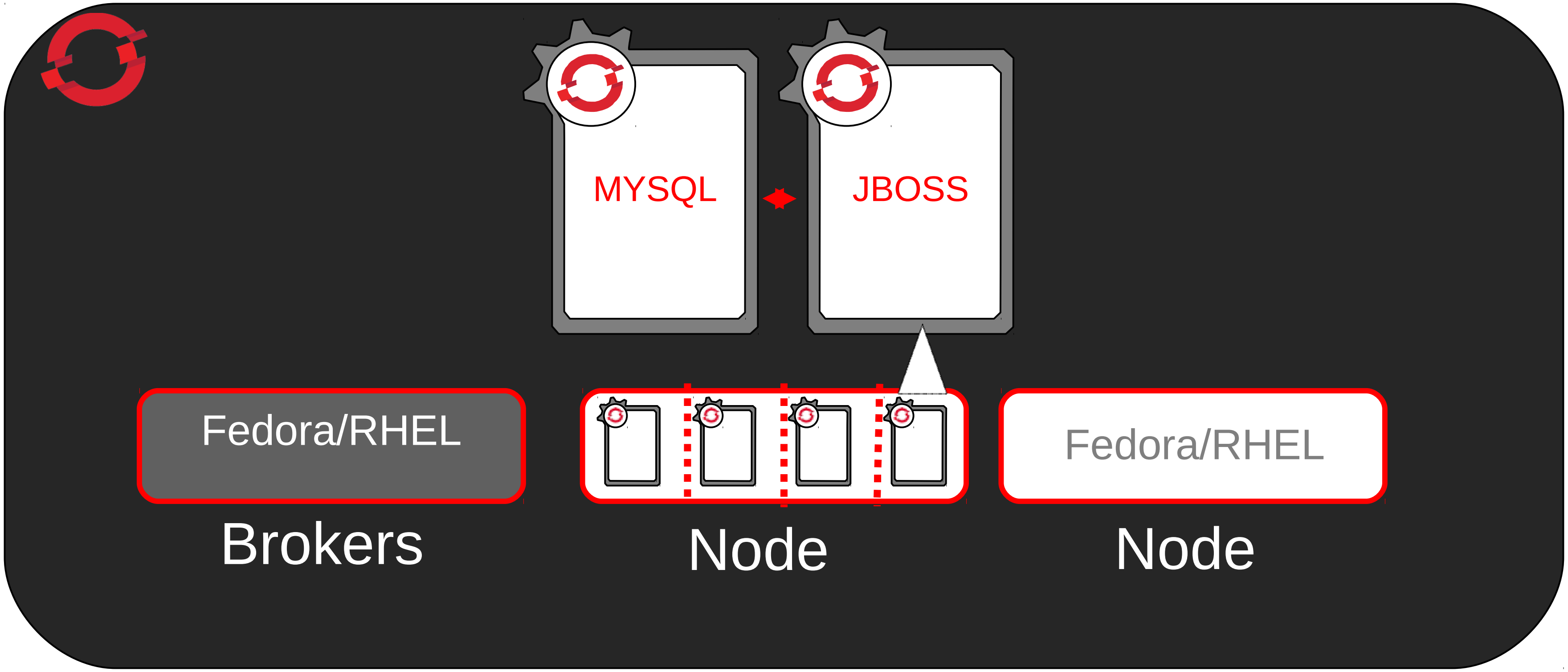


GEARS

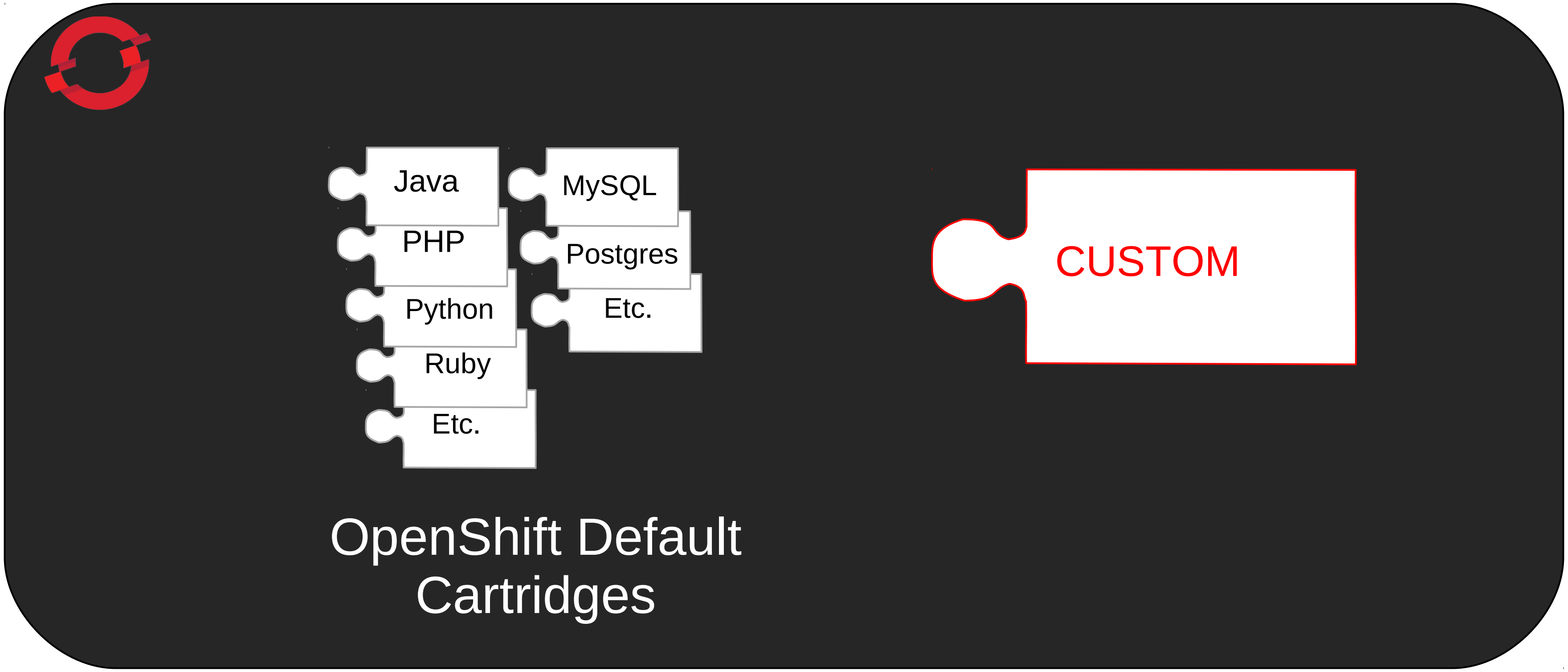

OpenShift GEARS represent secure containers in RHEL

CARTRIDGES

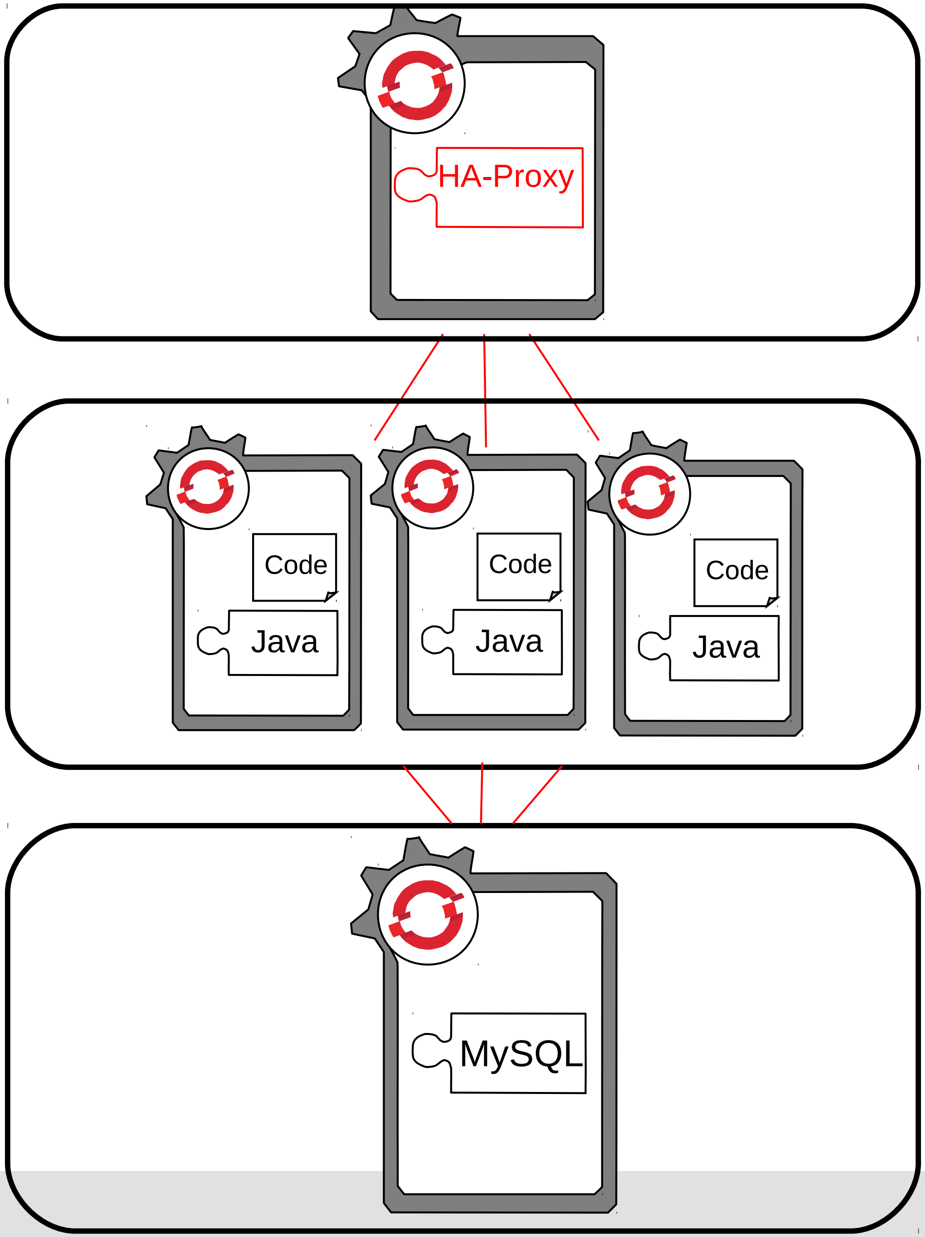

Web Console
Eclipse IDE
Cmd Line


MYSQL
JBOSS
Fedora/RHEL
Brokers
Node
Fedora/RHEL
Node

CARTRIDGES


Java
PHP
Python
Ruby
Etc.
MySQL
Postgres
Etc.
CUSTOM
OpenShift Default Cartridges

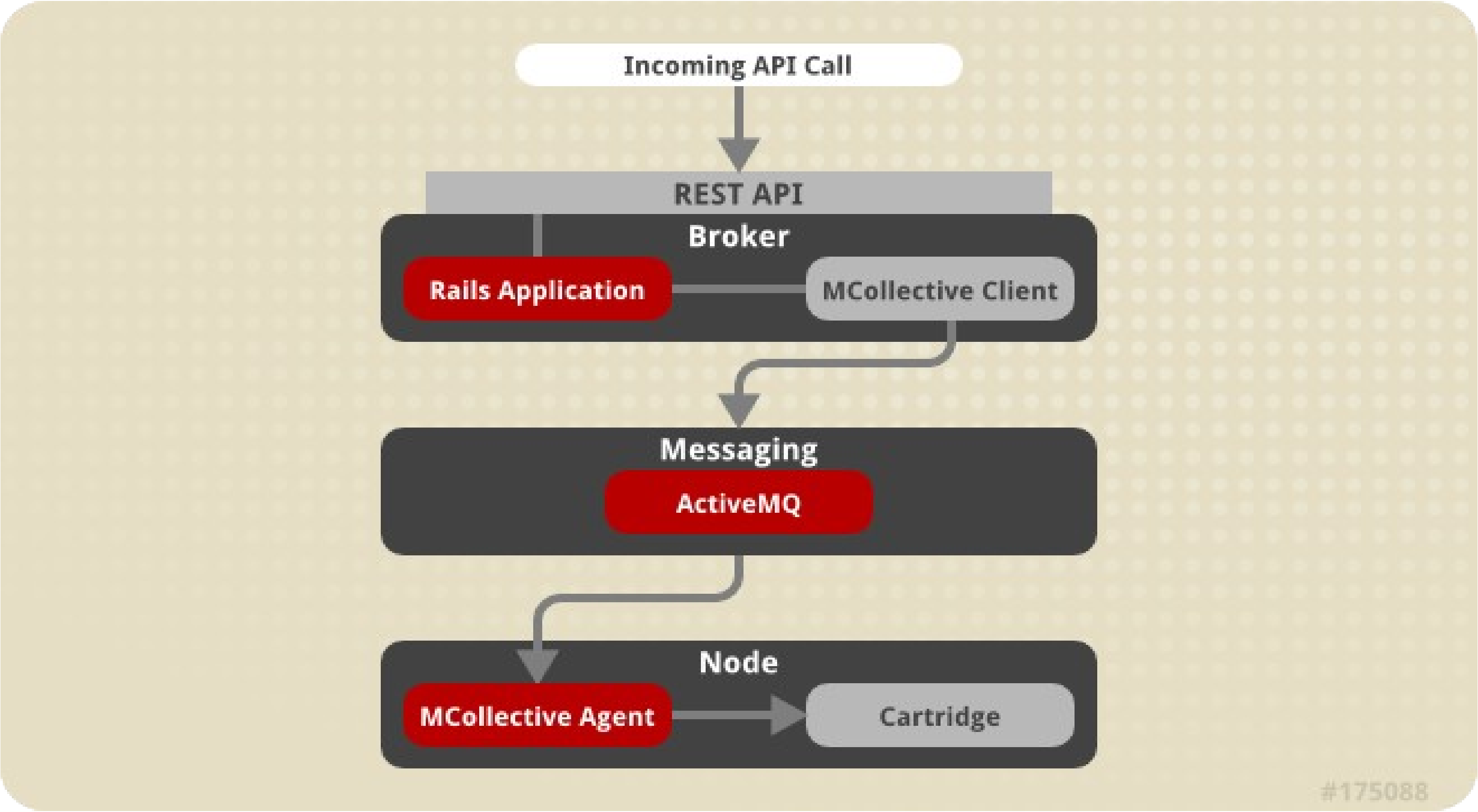
SCALING



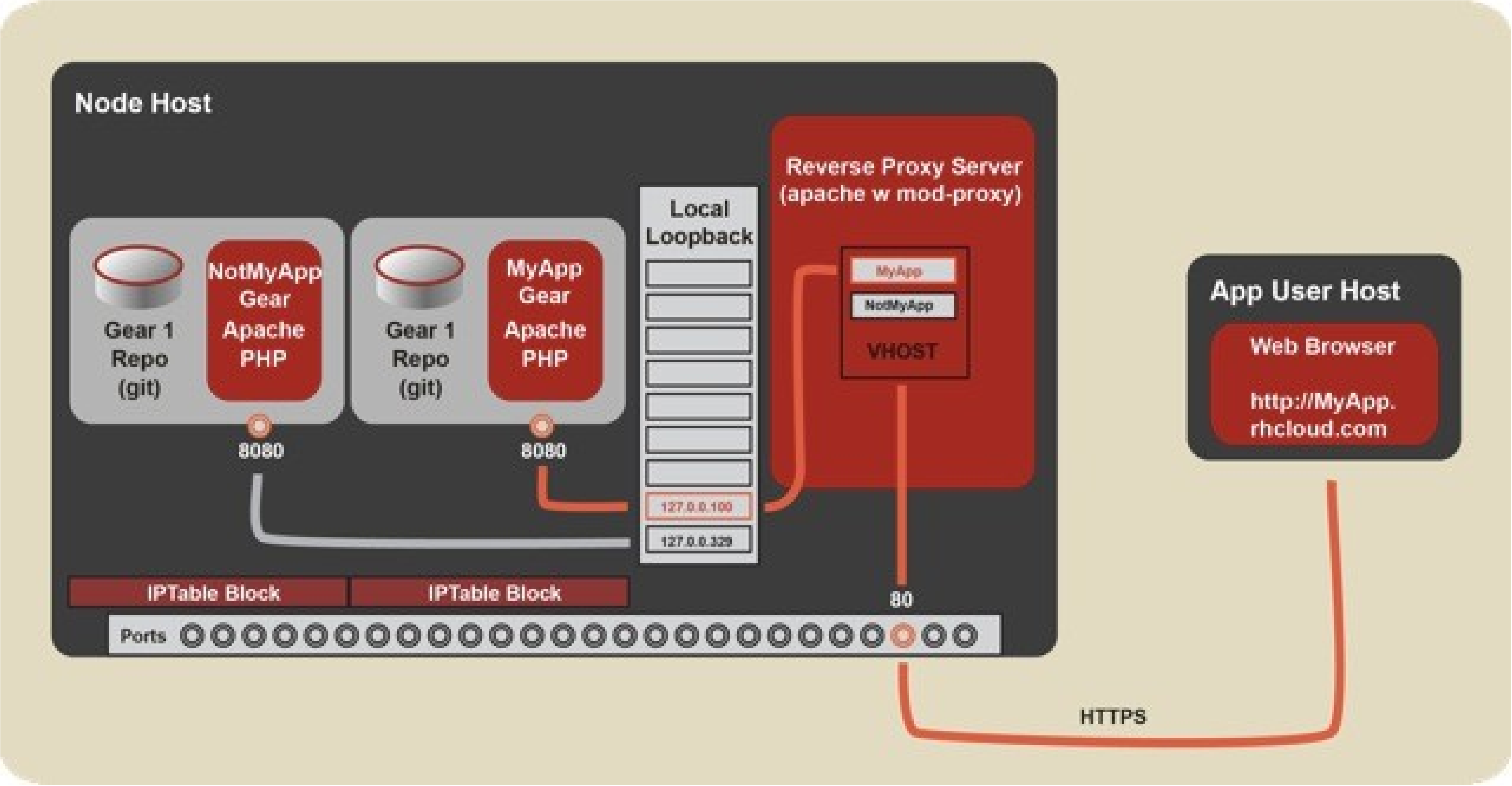
COMMUNICATION

Communication from external clients occurs through the REST API

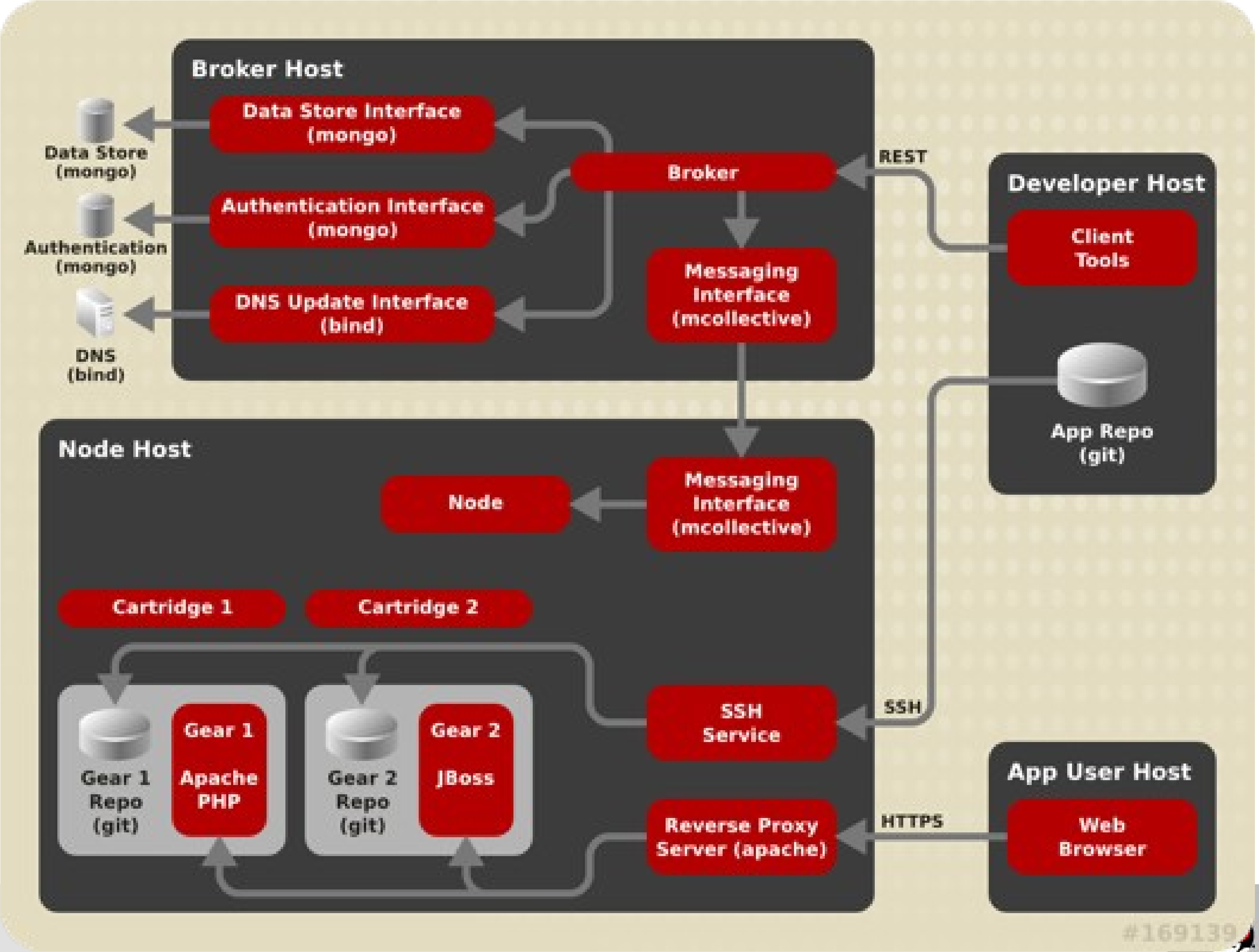
The Broker then communicates through the messaging service to nodes



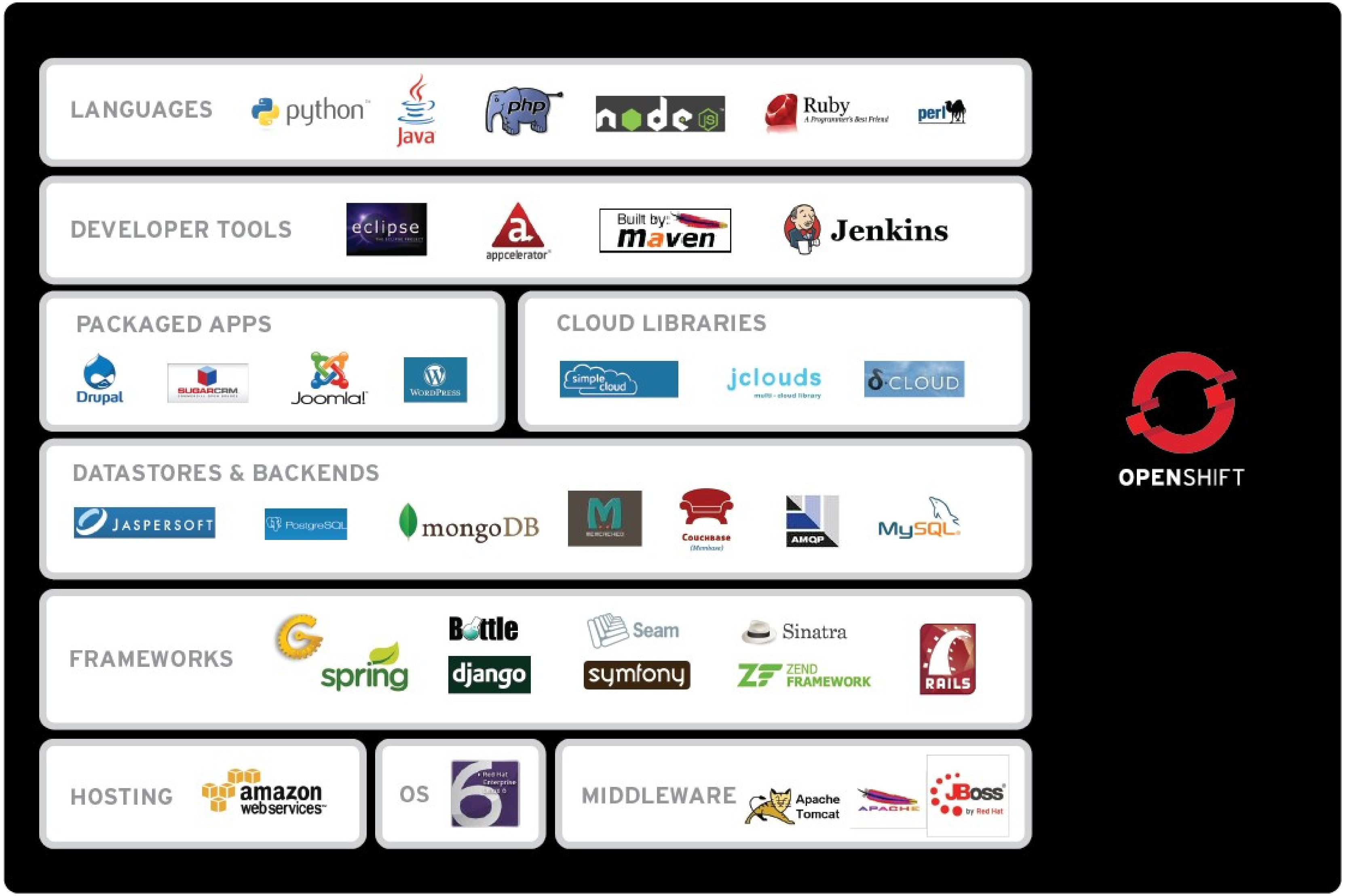
HTTP FLOW


Node Host
Gear 1
Repo
(git)
NotMyApp
Gear
Apache
PHP
Gear 1
Repo
(git)
MyApp
Gear
Apache
PHP
8080
8080
Local
Loopback
127.0.0.100
127.0.0.329
Reverse Proxy Server
(apache w mod-proxy)
MyApp
NotMyApp
VHOST
80
IPTable Block
IPTable Block
Ports
App User Host
Web Browser
http://MyApp.
rhcloud.com
HTTPS

COMPLETE PICTURE



Languages, Databases, etc.



LANGUAGES

DEVELOPER TOOLS

PACKAGED APPS

CLOUD LIBRARIES

DATASTORES & BACKENDS

FRAMEWORKS

HOSTING

OS

MIDDLEWARE

Comments / Help / Get Involved

- OpenShift Online: https://www.openshift.com/
- OpenShift Origin: http://openshift.github.io/
- Source code: https://github.com/openshift
- Email: openshift@redhat.com
- IRC: #openshift and #openshift-dev on freenode
- Twitter: @openshift