



L111795

Lab: Red Hat OpenShift on POWER - Part 2

Please bring an EMAIL enabled device:

In Part 1, get a Red Hat Developer Account if you don't already have one

In Part 2, get a github account if you don't already have one

Steven Knudson
sjknuds@us.ibm.com

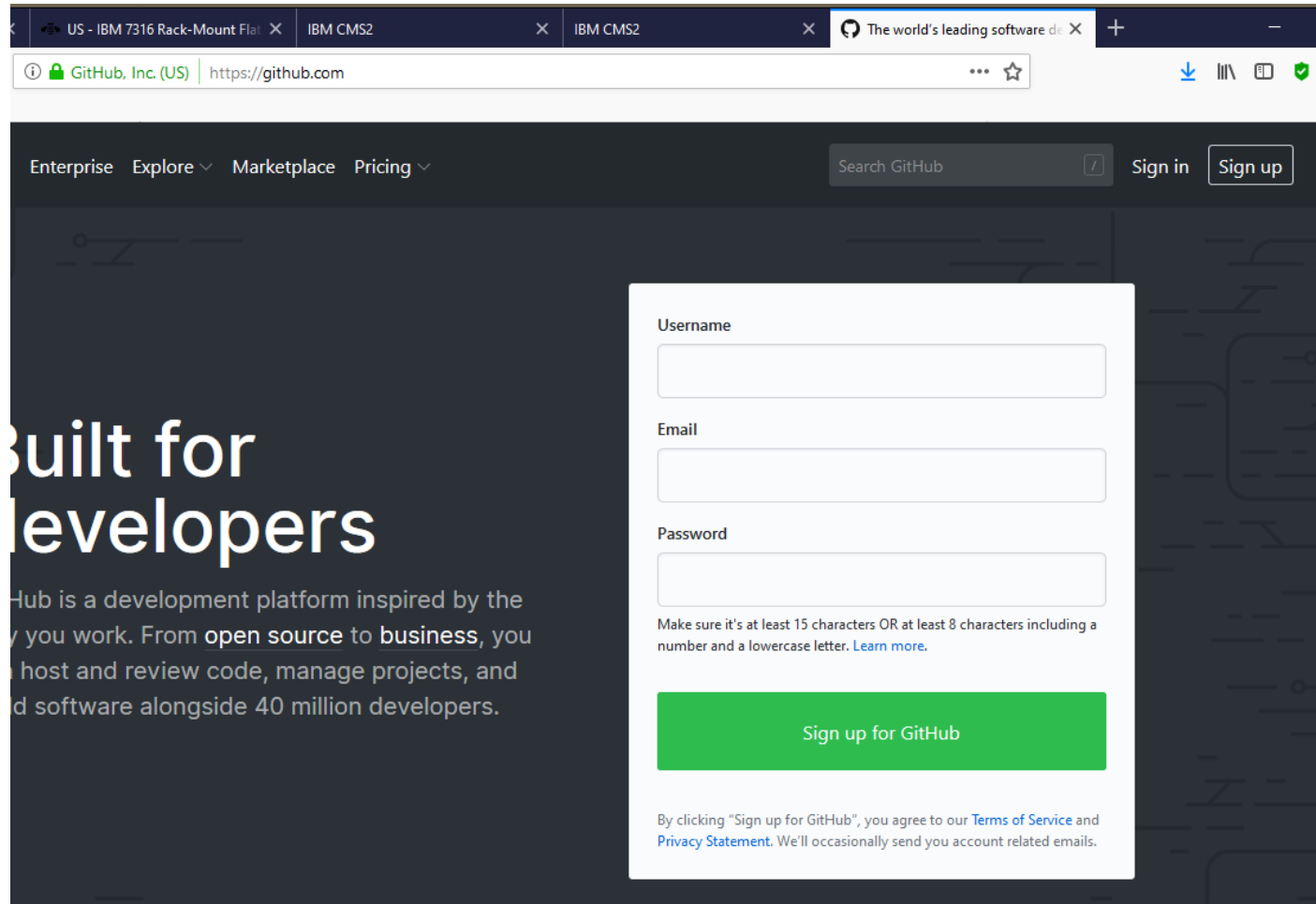
2019 IBM Systems Technical University
October 2019 | Las Vegas NV



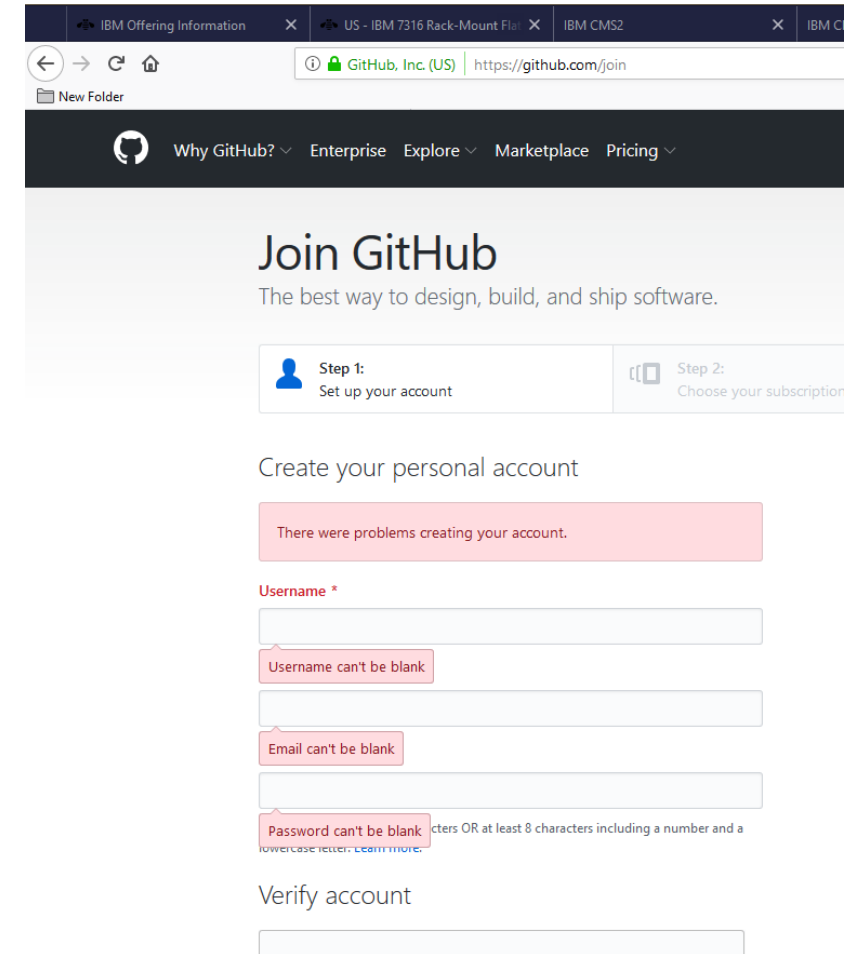
Session Objectives

- Sign up for GitHub
- Login to GitHub, fork a copy of a ruby repository, to your account
- Login to your OpenShift cluster
- Create Ruby project, and a a Ruby application, build, and deploy
- git clone your ruby repository to you server command line
- Make modifications
- git commit
- git push modified repository back to your github account
- rebuild and automatic redeploy
- refresh browser, see your modifications

If you don't have a github account, Sign up <https://github.com>



The screenshot shows the GitHub homepage with a dark background. On the left, the text "Built for developers" is visible. On the right, there is a white sign-up form with the following fields: Username, Email, and Password. Below the Password field, there is a note: "Make sure it's at least 15 characters OR at least 8 characters including a number and a lowercase letter. [Learn more.](#)". At the bottom of the form is a green button labeled "Sign up for GitHub". Below the button, there is a line of text: "By clicking 'Sign up for GitHub', you agree to our [Terms of Service](#) and [Privacy Statement](#). We'll occasionally send you account related emails."



The screenshot shows the "Join GitHub" page. At the top, there is a navigation bar with the GitHub logo and links: "Why GitHub?", "Enterprise", "Explore", "Marketplace", and "Pricing". Below the navigation bar, the heading "Join GitHub" is followed by the tagline "The best way to design, build, and ship software." There are two steps: "Step 1: Set up your account" and "Step 2: Choose your subscription". Under "Step 1", there is a heading "Create your personal account". Below this, there is a pink error message box that says "There were problems creating your account." followed by three input fields. The first field is labeled "Username *" and has a pink error message "Username can't be blank". The second field is for email and has a pink error message "Email can't be blank". The third field is for password and has a pink error message "Password can't be blank" followed by the text "Make sure it's at least 15 characters OR at least 8 characters including a number and a lowercase letter. [Learn more.](#)". At the bottom, there is a heading "Verify account" followed by an input field.

Logged into github, go to public repository <https://github.com/sclorg/ruby-ex>

Learn Git and GitHub without any code!

Using the Hello World guide, you'll start a branch, write comments, and open a pull request.

[Read the guide](#)

sclorg / ruby-ex

Watch 76 Star 20 Fork 1,983

Code Issues 0 Pull requests 1 Projects 0 Security Insights

No description, website, or topics provided.

28 commits 2 branches 0 releases 15 contributors

Branch: master New pull request Create new file Upload files Find File Clone or download

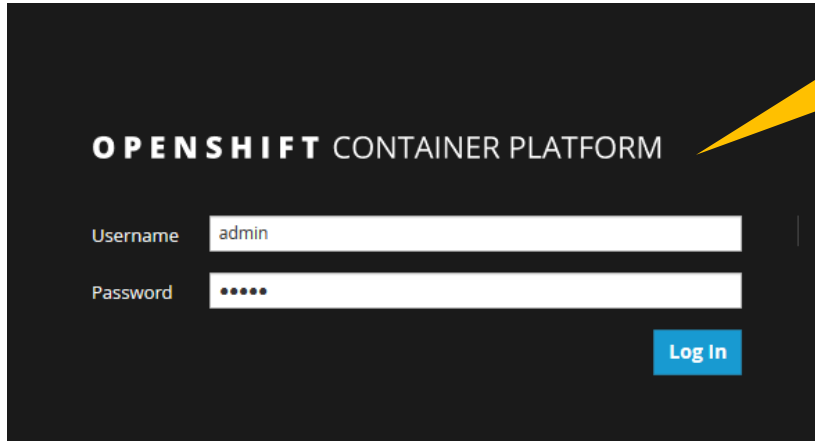
hhorak Merge pull request #25 from pvalena/master Latest commit c00ecd7 on Dec 13, 2018

Gemfile	Use puma as web server	3 years ago
Gemfile.lock	Generate Gemfile.lock with newer versions.	10 months ago
README.md	Fix location of ruby s2i image in the README	10 months ago
config.ru	Update url to reflect OKD rebranding	last year

Fork a copy to your own account.

OpenShift login problem?

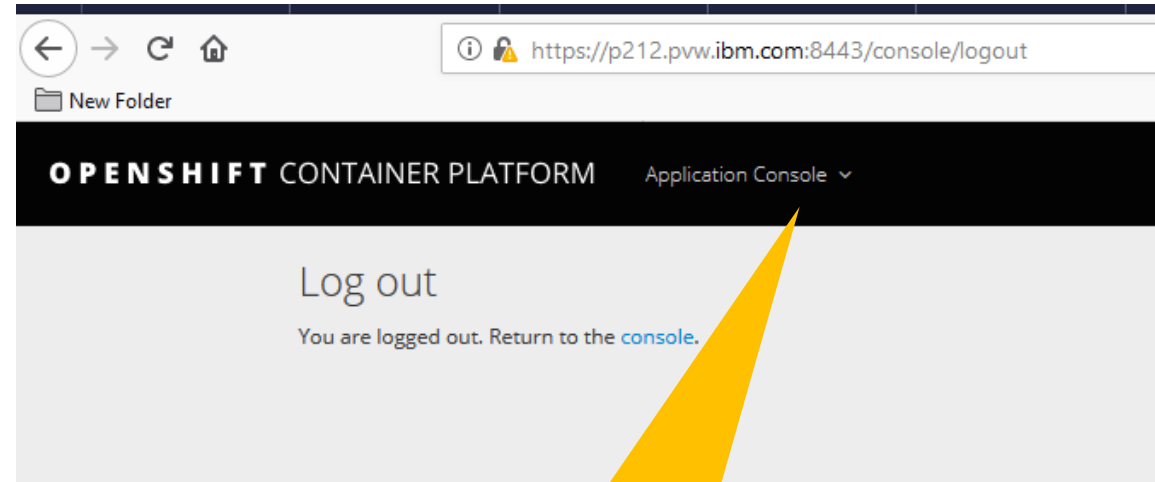
1) <https://your.ip.addr:8443>
admin / admin



OPENSIFT CONTAINER PLATFORM

Username

Password



If login attempt takes you here, hit this pull-down and select Service Catalog, and try the login again.

Back on OpenShift, Create a Project

1) <https://your.ip.addr:8443>
admin / admin

OPENSHIFT CONTAINER PLATFORM

Username

Password

CONTAINER PLATFORM Service Catalog

Search Catalog

Deploy Image Import YAML / JSON Select from Project

databases Middleware CI/CD Other

Apache HTTP Server (httpd)

CakePHP + MySQL

CakePHP + MySQL (Ephemeral)

Dancer + MySQL

Django + PostgreSQL

Django + PostgreSQL

Jenkins

Jenkins (Ephemeral)

Getting Started

- Documentation
- Interactive Learning Portal
- Container Development
- YouTube
- Blog

2) Create Project

Getting Started

Create Project

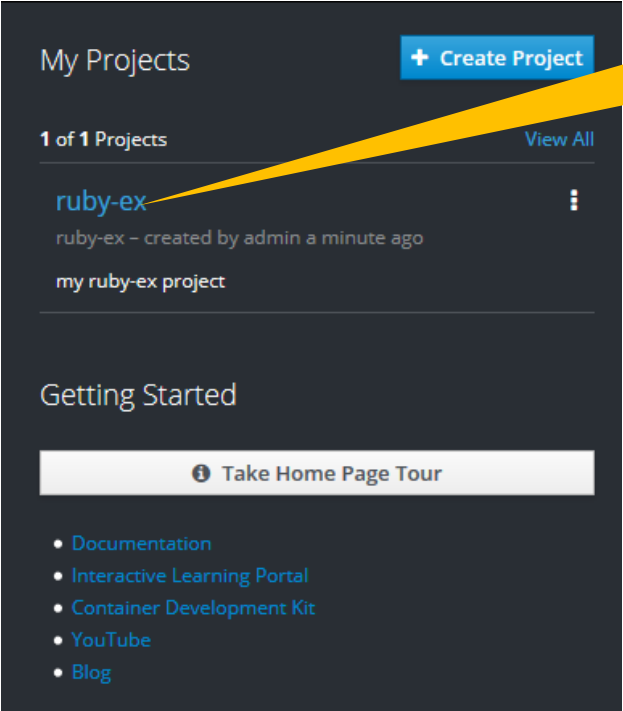
* Name
A unique name for the project.

Display Name

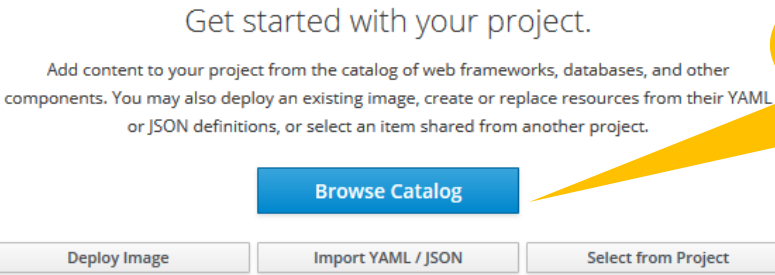
Description

3) Fill in and
hit Create

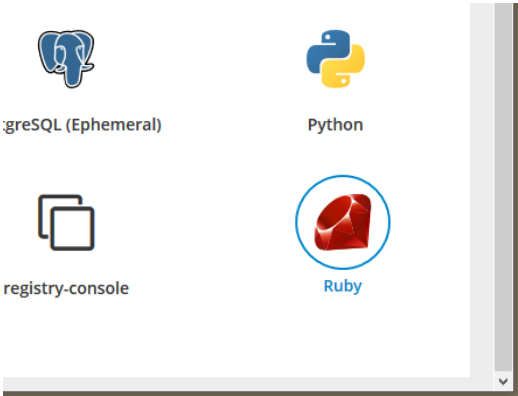
Open your project



Your Service catalog shows your one project, click on it to open



Browse Catalog, down and to the right, click on the basic "Ruby" app




Ruby build

Ruby

Information

Configuration

Results



Ruby

BUILDER: RUBY-C64LE

Build and run Ruby 2.5 application on RHEL 7. For more information about using this builder image, including OpenShift considerations, see <https://github.com/sclorg/s2i-ruby-container/blob/master/2.5/README.md>.

Sample Repository: <https://github.com/sclorg/ruby-ex.git>

Cancel

< Back

Next >

"Information" on the Ruby app, hit Next lower right corner

Ruby

Information

Configuration

Results

Version

2.5 — latest

* Application Name

ruby-ex

* Git Repository

<https://github.com/yourgithubaccount/ruby-ex>

[Try Sample Repository ↗](#)

If you have a private Git repository or need to change application defaults, view [advanced options](#).

Cancel

< Back

Create

1) Fill in Application Name
2) Your fork of ruby-ex in your github account

3) advanced options

IBM Systems Technical University © Copyright IBM Corporation 2019

8

Ruby build advanced options

Routing

☒ Create a route to the application

Hostname

Public hostname for the route. If not specified, a hostname is generated.

The hostname can't be changed after the route is created.

Path

Path that the router watches to route traffic to the service.

Target Port

Target port for traffic.

Security

☐ Secure route

Routes can be secured using several TLS termination types for serving certificates.

Build Configuration

☐ Configure a webhook build trigger ?

☐ Automatically build a new image when the builder image changes ?

☒ Launch the first build when the build configuration is created

[? About Build Configuration](#)

Callout 1 (top left): Do NOT use appxxx here
Use the Routing Hostname
from your tear strip

Callout 2 (top right): 1)The main thing you need here is a "Route" to your applications.
2) Each student has a unique wildcard in DNS for your hostname, e.g.,
p249.pvw.ibm.com uses
ruby-ex.app249.pvw.ibm.com

Callout 3 (bottom right): 1) Uncheck webhook build trigger and uncheck Automatically build
2) You might have these on, if you had git server on your network, without firewall between it and OpenShift. Every git commit could be automatically built and launched

Ruby build advanced options

Deployment Configuration

[About Deployment Configuration](#)

Autodeploy when

☒ New image is available

☒ Deployment configuration changes

Environment Variables (Runtime only) ⓘ

[Show Image Environment Variables](#)

name	value
------	-------

[Add Value](#) | [Add Value from Config Map or Secret](#)

Scaling

[About Scaling](#)

Strategy

Manual

Scale replicas manually or automatically based on CPU usage.

[Learn More](#)

Replicas

1

The number of instances of your image.

Labels

[About Labels](#)

Each label is applied to each created resource.

app	ruby-ex
-----	---------

[Add Label](#)

Hide [advanced options](#) for source, routes, builds, and deployments.

[Create](#) [Cancel](#)

1) Scrolling farther down advanced options, Autodeploy is fine, and Scaling 1 Replica is fine.

2) At the very bottom of advanced options, label from your application name, and hit Create

Continue to Project Overview

ruby-ex has been created.

[Continue to the project overview.](#)

Making code changes

Continue to Project overview

Name

Filter by name

List by

Application

APPLICATION

ruby-ex

<http://ruby-ex.appxxx.pvw.ibm.com>

> DEPLOYMENT CONFIG

ruby-ex, #1

1

 pod

1 app running in 1 Kubernetes pod

OPENSIFT CONTAINER PLATFORM

Application Console

admin

ruby-ex

Overview

Builds

Builds

Pipelines

Images

Search Catalog

Add to Project

Add

Last Version	Status	Created	Trigger
#1	Active, 1 replica	3 minutes ago	Config change

If you go from Applications to Builds, and hit Builds again

Name	Last Build	Status	Duration	Created	Type	Source
ruby-ex	#1	Complete	45 seconds	7 minutes ago	Source	https://github.com/taxesdone/ruby-ex

You can see your build status. Click on the build itself

View Build Log

Builds > ruby-ex

ruby-ex created 10 minutes ago

app ruby-ex

History Configuration Environment Events

✓ Build #1 is complete. [View Log](#)
started 10 minutes ago

Filter by label	
Build	Status
#1	✓ Complete

View Log. If you get here quick enough, you might see the log as it is written during the build

Status: ✓ Complete Log from Sep 29, 2019 7:52:10 PM to Sep 29, 2019 7:52:55 PM

Save | Expand

```
1 Cloning "https://github.com/taxesdone/ruby-ex" ...
2   Commit: 23e6f0822af74f3bd2688cc5909a54de2e1b2bec (Steve 6th)
3   Author: taxesdone <sjknuds@us.ibm.com>
4   Date:   Fri May 24 13:22:21 2019 -0400
5 Using docker-registry.default.svc:5000/openshift/ruby@sha256:aafacc1b6df96392529096bdd64e241ecd6aa451984715d09e3b761eb7f81089 as the s2i builder image
6 ---> Installing application source ...
7 ---> Building your Ruby application from source ...
8 ---> Running 'bundle install --retry 2 --deployment --without development:test' ...
9 Warning: the running version of Bundler (1.16.1) is older than the version that created the lockfile (1.16.4). We suggest you upgrade to the latest
  version of Bundler by running `gem install bundler`.
10 Fetching gem metadata from https://rubygems.org/ .....
11 Using bundler 1.16.1
12 Fetching puma 3.12.0
13 Installing puma 3.12.0 with native extensions
14 Fetching rack 2.0.6
15 Installing rack 2.0.6
16 Bundle complete! 2 Gemfile dependencies, 3 gems now installed.
17 Gems in the groups development and test were not installed.
18 Bundled gems are installed into `./bundle`
19 ---> Cleaning up unused ruby gems ...
20 Running `bundle clean --verbose` with bundler 1.16.1
21 Warning: the running version of Bundler (1.16.1) is older than the version that created the lockfile (1.16.4). We suggest you upgrade to the latest
  version of Bundler by running `gem install bundler`.
22 Frozen, using resolution from the lockfile
23
24 Pushing image docker-registry.default.svc:5000/ruby-ex/ruby-ex:latest ...
25 Pushed 1/6 layers, 18% complete
26 Pushed 2/6 layers, 33% complete
27 Push successful
```

End of log

Go to End

Go to Top

Browser to your Ruby app <http://ruby-ex.appxxx.pvw.ibm.com>

Welcome to your Ruby application on OpenShift

Deploying code changes

The source code for this application is available to be forked from the [OpenShift GitHub repository](#). You can configure a webhook in your repository to make OpenShift automatically start a build whenever you push your code:

1. From the Web Console homepage, navigate to your project
2. Click on Browse > Builds
3. From the view for your Build click on the button to copy your GitHub webhook
4. Navigate to your repository on GitHub and click on repository settings > webhooks
5. Paste your webhook URL provided by OpenShift — that's it!

After you save your webhook, if you refresh your settings page you can see the status of the ping that Github sent to OpenShift to verify it can reach the server.

Note: adding a webhook requires your OpenShift server to be reachable from GitHub.

Working in your local Git repository

If you forked the application from the OpenShift GitHub example, 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
```

After pushing changes, you'll need to manually trigger a build if you did not setup a webhook as described above.

Managing your application

Documentation on how to manage your application from the Web Console or Command Line is available at the [Developer Guide](#).

Web Console

You can use the Web Console to view the state of your application components and launch new builds.

Command Line

With the [OpenShift command line interface](#) (CLI), you can create applications and manage projects from a terminal.

Development Resources

- [OpenShift Documentation](#)
- [Openshift Origin GitHub](#)
- [Source To Image GitHub](#)
- [Getting Started with Ruby on OpenShift](#)
- [Stack Overflow questions for OpenShift](#)
- [Git documentation](#)

if you get here, Good Job!

In the pages ahead, lets take this farther:

- 1) git clone it to your RHEL command line
- 2) make modifications
- 3) git commit
- 4) git push back to your github account
- 5) Rebuild in OpenShift
- 6) Refresh the browser, see your changes

PuTTY into RHEL student / abcd1234

Suppress some noise with git commands, by adding content to /home/student/.gitconfig

```
$ git config --global user.name "Your Name"
$ git config --global user.email you@email.com
$ git config --global push.default matching
```

You can use your real values here. You will be pushing them back up to your exact github account

```
$ git clone https://github.com/yourgithubaccount/ruby-ex ./ruby-ex
$ cd ruby-ex
```

```
$ vi config.ru (When you edit here, search for "Welcome" twice, and that should bring you to
                 "Welcome to your Ruby application on OpenShift" Change "your" to something
                 like "Joe's 2nd") save and quit
```

```
$ git commit -m "Joe 2nd" -a
```

```
$ git push https://github.com/yourgithubaccount/ruby-ex (answer prompt for user and password)
```

On the next page, go back to OpenShift, build again and allow Autodeploy again

OpenShift - rebuild

OPENSIFT CONTAINER PLATFORM

Application Console

admin

ruby-ex

Add to Project

Overview

Applications

Builds

Resources

Builds

Learn More

Filter by label

Add

Name	Last Build	Status	Duration	Created	Type	Source
ruby-ex	#1	✓ Complete	41 seconds	3 minutes ago	Source	https://github.com/taxesdone/ruby-ex

You see your previous build was complete. Click on it for details

Builds > ruby-ex

ruby-ex created 4 minutes ago

app ruby-ex

History

Configuration

Environment

Events

✓ Build #1 is complete. [View Log](#)
started 4 minutes ago

Filter by label

Add

Build	Status	Duration	Created
#1	✓ Complete	41 seconds	4 minutes ago

Start Build Actions

And hit Start Build

OpenShift - rebuild

Builds > ruby-ex

ruby-ex created 7 minutes ago

app ruby-ex

History Configuration Environment Events

✔ Build #2 is complete. [View Log](#)
started 2 minutes ago

Build	Status	Duration	Created
#2	✔ Complete	40 seconds	2 minutes ago
#1	✔ Complete	41 seconds	7 minutes ago

You see your 2nd build completed

OPENSIFT CONTAINER PLATFORM Application Console

ruby-ex

Search Catalog

Overview Applications Builds

Deployments [Learn More](#)

Name	Last Version	Status	Created	Trigger
ruby-ex	#2	🔄 Active, 1 replica	2 minutes ago	Image change

And Applications - Deployments shows you are running the 2nd version

Browser refresh, and see your 2nd build deployed

Welcome to Joe's 2nd application on OpenShift

Deploying code changes

The source code for this application is available to be forked from the [OpenShift GitHub repository](#). You can configure a webhook in your repository to make OpenShift automatically start a build whenever you push your code:

1. From the Web Console homepage, navigate to your project
2. Click on Browse > Builds
3. From the view for your Build click on the button to copy your GitHub webhook
4. Navigate to your repository on GitHub and click on repository settings > webhooks
5. Paste your webhook URL provided by OpenShift — that's it!

After you save your webhook, if you refresh your settings page you can see the status of the ping that Github sent to OpenShift to verify it can reach the server.

Note: adding a webhook requires your OpenShift server to be reachable from GitHub.

Working in your local Git repository

If you forked the application from the OpenShift GitHub example, 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
```

After pushing changes, you'll need to manually trigger a build if you did not setup a webhook as described above.

Managing your application

Documentation on how to manage your application from the Web Console or Command Line is available at the [Developer Guide](#).

Web Console

You can use the Web Console to view the state of your application components and launch new builds.

Command Line

With the [OpenShift command line interface](#) (CLI), you can create applications and manage projects from a terminal.

Development Resources

- [OpenShift Documentation](#)
- [Openshift Origin GitHub](#)
- [Source To Image GitHub](#)
- [Getting Started with Ruby on OpenShift](#)
- [Stack Overflow questions for OpenShift](#)
- [Git documentation](#)

If you get a "jumbled" config

- Plan on "backing" everything off, and try again:
- Applications -> Routes – click on the route – Actions – Delete
Applications -> Services – click on the service – Actions – Delete
Applications – Deployments – click on the deployment – Actions – Delete
Builds – Builds – click on the build – Actions – Delete
Builds – Images – click on the image – Actions – Delete
Click on the Project – hit pulldown – View All Projects - ... menu – Delete Project
- What happens if you delete the pod? The deployment starts are new pod. You have to delete the deployment, not the pod(s)

Thank you!



L111795 OpenShift on Power Part 2

Steven Knudson

IBM Power CTS COMM/CSI

sjknuds@us.ibm.com

Please complete the Session Evaluation!

Notices and disclaimers

- © 2019 International Business Machines Corporation. No part of this document may be reproduced or transmitted in any form without written permission from IBM.
- **U.S. Government Users Restricted Rights — use, duplication or disclosure restricted by GSA ADP Schedule Contract with IBM.**
- Information in these presentations (including information relating to products that have not yet been announced by IBM) has been reviewed for accuracy as of the date of initial publication and could include unintentional technical or typographical errors. IBM shall have no responsibility to update this information. **This document is distributed “as is” without any warranty, either express or implied. In no event, shall IBM be liable for any damage arising from the use of this information, including but not limited to, loss of data, business interruption, loss of profit or loss of opportunity.** IBM products and services are warranted per the terms and conditions of the agreements under which they are provided.
- IBM products are manufactured from new parts or new and used parts.
In some cases, a product may not be new and may have been previously installed. Regardless, our warranty terms apply.”
- **Any statements regarding IBM's future direction, intent or product plans are subject to change or withdrawal without notice.**
- Performance data contained herein was generally obtained in a controlled, isolated environments. Customer examples are presented as illustrations of how those
- customers have used IBM products and the results they may have achieved. Actual performance, cost, savings or other results in other operating environments may vary.
- References in this document to IBM products, programs, or services does not imply that IBM intends to make such products, programs or services available in all countries in which IBM operates or does business.
- Workshops, sessions and associated materials may have been prepared by independent session speakers, and do not necessarily reflect the views of IBM. All materials and discussions are provided for informational purposes only, and are neither intended to, nor shall constitute legal or other guidance or advice to any individual participant or their specific situation.
- It is the customer's responsibility to insure its own compliance with legal requirements and to obtain advice of competent legal counsel as to the identification and interpretation of any relevant laws and regulatory requirements that may affect the customer's business and any actions the customer may need to take to comply with such laws. IBM does not provide legal advice or represent or warrant that its services or products will ensure that the customer follows any law.

Notices and disclaimers continued

- Information concerning non-IBM products was obtained from the suppliers of those products, their published announcements or other publicly available sources. IBM has not tested those products about this publication and cannot confirm the accuracy of performance, compatibility or any other claims related to non-IBM products. Questions on the capabilities of non-IBM products should be addressed to the suppliers of those products. IBM does not warrant the quality of any third-party products, or the ability of any such third-party products to interoperate with IBM's products. **IBM expressly disclaims all warranties, expressed or implied, including but not limited to, the implied warranties of merchantability and fitness for a purpose.**
- The provision of the information contained herein is not intended to, and does not, grant any right or license under any IBM patents, copyrights, trademarks or other intellectual property right.
- IBM, the IBM logo, ibm.com and [names of other referenced IBM products and services used in the presentation] are trademarks of International Business Machines Corporation, registered in many jurisdictions worldwide. Other product and service names might be trademarks of IBM or other companies. A current list of IBM trademarks is available on the Web at "Copyright and trademark information" at: www.ibm.com/legal/copytrade.shtml

This presentation uses the IBM Plex™ font

IBM Plex™ is our new typeface. It's global, it's versatile and it's distinctly IBM.

IBM Plex
Sans

The IBM company is freeing itself from the cold, modernist cliché and replacing Helvetica with a new corporate typeface. Also replaces Arial, Calibri, Lucida Grande, Trebuchet, etc.

IBM Plex
Mono

A little *something* for **developers**. Replaces Courier New, Letter Gothic, Lucida Console, etc.

IBM Plex
Serif

A hybrid of the third kind (combining the best of Plex, *Bodoni*, and **Janson** into a contemporary serif). Replaces Cambria, Garamond, Lucida Bright, Times New Roman, etc.

IBM Plex is freely available as TrueType and OpenType at: <https://github.com/IBM/plex/releases> and looks consistently good across Windows, Linux and Mac