

Changing the Open Hybrid Cloud Game

Deploying OpenShift to Azure

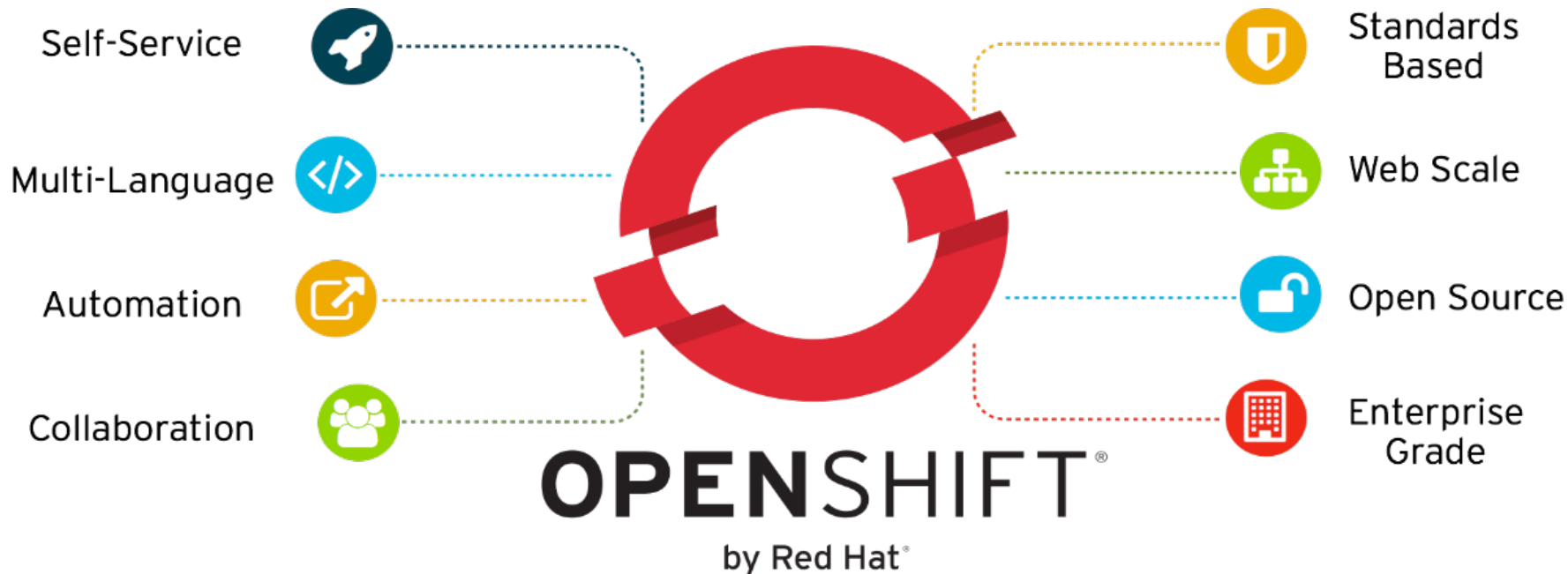
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Cloud Architect

Commercial Software Engineering

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Red Hat OpenShift Container Platform



https://access.redhat.com/documentation/en-us/reference_architectures/2017/html/deploying_red_hat_openshift_container_platform_3_on_microsoft_azure/

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English

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DEPLOYING RED HAT OPENSIFT
CONTAINER PLATFORM 3 ON
MICROSOFT AZURE

COMMENTS AND FEEDBACK

1. EXECUTIVE SUMMARY

2. COMPONENTS AND
CONFIGURATION

2.1. Microsoft Azure Cloud
Instance Details

2.1.1. Microsoft Azure Cloud
Instance Storage Details

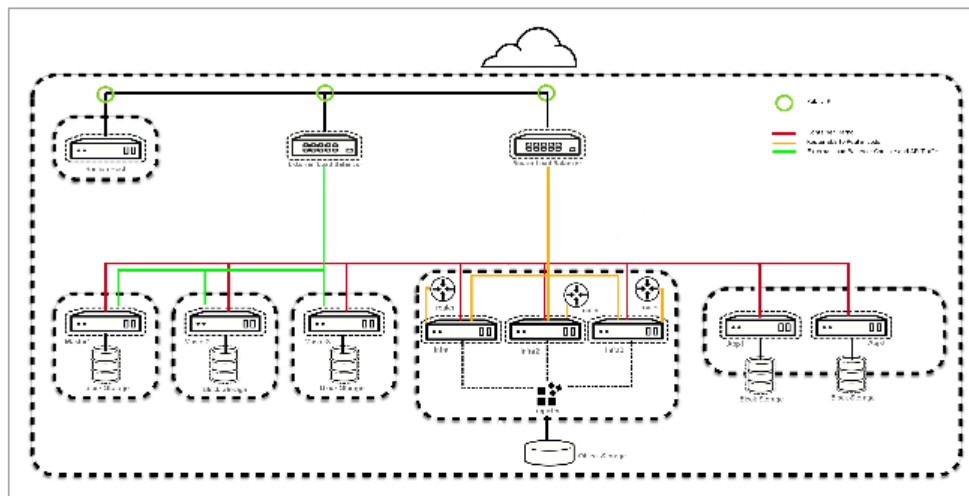
2.2. Microsoft Azure Load

DEPLOYING RED HAT OPENSIFT
CONTAINER PLATFORM 3 ON
MICROSOFT AZURE

REFERENCE
ARCHITECTURES
2017

Glenn West
Ryan Cook

100%



This reference architecture breaks down the deployment into three separate phases.

- Phase 1: Provision the Virtual Machines on **Microsoft Azure**
- Phase 2: Install **OpenShift Container Platform** on **Microsoft Azure**
- Phase 3: Post deployment activities

For Phase 1, the provisioning of the environment is done using a series of `Azure Resource Manager` templates (`ARM`) provided in the `openshift-ansible-contrib` `git` repository. Once the infrastructure is deployed by `ARM` , as the last action, the `ARM` templates will start the next phase by running a bash script that starts phase 2.

Phase 2 is the provisioning of **OpenShift Container Platform** using the ansible playbooks



This repository

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openshift / **openshift-ansible-contrib**

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History



e-minguez committed with cooktheryan Added optional metrics to Azure

Latest commit d0343d6 11 days ago

..

ansibledployocp

Added optional metrics to Azure

10 days ago

images

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8 months ago

testcases

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8 months ago

BUGS.md

Remove rui misspelling, and Remove closed bug

7 months ago

README.md

Add support for orgid/activation key and support for rhn username and...

2 months ago

azuredeploy.json

Added optional metrics to Azure

10 days ago

azuredeploy.parameters.json

Update to Openshift 3.5 (#325)

3 months ago

bastion.json

Added optional metrics to Azure

10 days ago

bastion.sh

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10 days ago

create_service_principle.sh

Update to Openshift 3.5 (#325)

3 months ago

infranode.json

Update to Openshift 3.5 (#325)

3 months ago

master.json

Update to Openshift 3.5 (#325)

3 months ago

master.sh

Added optional metrics to Azure

10 days ago

Red Hat OpenShift Container Platform on Azure

When creating the Red Hat OpenShift Container Platform on Azure, you will need a SSH RSA key for access.

SSH Key Generation

1. [Windows](#)
2. [Linux](#)
3. [Mac](#)

Create the Installation

Create the Installation on the Azure Portal



Deploy to Azure



Visualize

Development Branch



Deploy to Azure



Visualize

Parameters

Parameters

For macOS:

1. SSHKeyData - Public Key - Copy/Paste from `.ssh/id_rsa.pub` - `pbcopy < ~/.ssh/id_rsa.pub`
2. PoolId - From RHEL - `subscription-manager list --available`
3. SSHPrivate Data - Base64 Encoded `id_rsa` - `cat ~/.ssh/id_rsa | base64 | pbcopy`

For RHEL/Fedora/CentOS:

1. SSHKeyData - Public Key - Copy/Paste from `.ssh/id_rsa.pub` - `xclip -selection clipboard < ~/.ssh/id_rsa.pub`
2. PoolId - From RHEL - `subscription-manager list --available`
3. SSHPrivate Data - Base64 Encoded `id_rsa` - `cat ~/.ssh/id_rsa | base64 | xclip -selection clipboard`

Input Parameters

| Name | Type | Description |
|---------------|--------------|--|
| adminUsername | String | Username for SSH Login and OpenShift Webconsole |
| adminPassword | SecureString | Password for the OpenShift Webconsole |
| sshKeyData | String | Public SSH Key for the Virtual Machines |
| masterDnsName | String | DNS Prefix for the OpenShift Master / Webconsole |
| numberOfNodes | Integer | Number of OpenShift Nodes to create |
| masterVMSize | String | The size of the Master Virtual Machine |
| ... | ... | ... |

Output Parameters

| Name | Type | Description |
|----------------------------|--------|--|
| OpenShift Webconsole | String | URL of the OpenShift Webconsole |
| OpenShift Master ssh | String | SSH String to Login at the Master |
| OpenShift Router Public IP | String | Router Public IP. Needed if you want to create your own Wildcard DNS |

This template deploys Red Hat OpenShift on Azure.


Attribution:

Thanks to: Daniel Falkner - Microsoft Germany - For original templates.

Harold Wong Harold.Wong@microsoft.com for his great support.

Ivan McKinley

For full commit history: Please see - <https://github.com/glennswest/azure-openshift/>

 e-minguez Added optional metrics to Azure

d0343d6 10 days ago

5 contributors 

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Raw

Blame

History



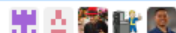
```
1  {
2    "$schema" : "https://schema.management.azure.com/schemas/2015-01-01/deploymentTemplate.json#",
3    "contentVersion" : "1.0.0.0",
4    "parameters" : {
5      "adminUsername" : {
6        "type" : "string",
7        "minLength" : 1,
8        "metadata" : {
9          "description" : "User name for the Virtual Machine and OpenShift Webconsole."
10       }
11     },
12    "adminPassword" : {
13      "type" : "securestring",
14      "metadata" : {
15        "description" : "User password for the OpenShift Webconsole"
16      }
17     },
18     "vmSize" : {
```

```
{
  "$schema" : "https://schema.management.azure.com/schemas/2015-01-01/deploymentTemplate.json#",
  "contentVersion" : "1.0.0.0",
  "parameters" : {
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      "type" : "string",
      "minLength" : 1,
      "metadata" : {
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    },
    "adminPassword" : {
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      "metadata" : {
        "description" : "User password for the OpenShift Webconsole"
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    },
    "sshKeyData" : {
      "type" : "securestring",
      "metadata" : {
        "description" : "SSH RSA public key file as a string."
      }
    },
    "WildcardZone" : {
      "type" : "string",
      "minLength" : 1,
      "metadata" : {
        "description" : "Globally unique wildcard DNS domain for app access."
      }
    },
    "numberOfNodes" : {
      "type" : "int",
      "defaultValue" : 3,
      "minValue" : 3,
      "maxValue" : 30,
      "metadata" : {
        "description" : "Number of OpenShift Nodes to deploy (max 30)"
      }
    },
    "image" : {
      "type" : "string",
      "allowedValues" : [
        "rhel"
      ],
      "defaultValue" : "rhel",
```

e-minguez Added optional metrics to Azure

d0343d6 10 days ago

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Raw

Blame

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```

1  {
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7        "minLength" : 1,
8        "metadata" : {
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10       }
11     },
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14       "metadata" : {
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16       }
17     },
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869        "
```

Additional roles and playbooks for OpenShift installation and management <https://www.openshift.com>

Edit

Add topics

828 commits

8 branches

1 release

46 contributors

Branch: master

New pull request

Create new file

Upload files

Find file

Clone or download

This branch is even with openshift:master.

Pull request

Compare



Tlacenka committed with tomasdedovic Playbook prerequisites.yml checks that prerequisites are met before p...

Latest commit a8639ab 16 hours ago



.github

Add ISSUE/PR github templates

15 days ago



inventory/aws

cleanup

a year ago



misc/gce-federation

adding more details to the README for better explanation (#458)

26 days ago



playbooks

Playbook prerequisites.yml checks that prerequisites are met before p...

16 hours ago



reference-architecture

mend

4 days ago



roles

Merge pull request #525 from bogdando/manage_packages

11 days ago



vagrant

Merge pull request #245 from chekoly/vagrant-fix02

5 months ago



.gitignore

Replace rhsm_* with rhel_subscribe (#332)

2 months ago



.travis.yml

add travis/tox testing

6 months ago



.yamllint

add travis/tox testing

6 months ago



LICENSE.md

Initial Commit

a year ago



README.md

Update README for how to run tests

6 months ago



requirements.txt

add travis/tox testing

6 months ago



setup.cfg

Playbooks for creating a minimal gce federated cluster (#433)

28 days ago



setup.py

update setup.py to fix yamllint error

6 months ago



test-requirements.txt

add travis/tox testing

6 months ago


```
280     "metadata" : {  
281         "description" : "Enable OCP metrics"  
282     }  
283 }  
284 },  
285 "variables" : {  
286     "gituser" : "haroldwongms",  
287     "branch" : "hw-azure",  
288     "baseTemplateUrl" : "[concat('https://raw.githubusercontent.com/', variables('gituser'), '/openshift-ansible-contrib/', variables('branch'  
289     "baseVMachineTemplateUriInfranode" : "[concat(variables('baseTemplateUrl'), 'infranode.json')]",  
290     "baseVMachineTemplateUriNode" : "[concat(variables('baseTemplateUrl'), 'node.json')]",  
291     "baseVMachineTemplateUriMaster" : "[concat(variables('baseTemplateUrl'), 'master.json')]",  
292     "location" : "[resourceGroup().location]",  
293     "virtualNetworkName" : "openshiftVnet",  
294     "addressPrefix" : "10.0.0.0/16",  
295     "infranodesubnetName" : "infranodeSubnet",  
296     "infranodesubnetPrefix" : "10.0.2.0/24",  
297     "nodesubnetName" : "nodeSubnet",  
298     "nodesubnetPrefix" : "10.0.1.0/24",  
299     "mastersubnetName" : "masterSubnet",  
300     "mastersubnetPrefix" : "10.0.0.0/24",  
301     "infranodeStorageName" : "[concat('sainf', resourceGroup().name)]",  
302     "nodeStorageName" : "[concat('sanod', resourceGroup().name)]",  
303     "masterStorageName" : "[concat('samass', resourceGroup().name)]",  
304     "vhdStorageType" : "Premium_LRS",  
305     "vnetId" : "[resourceId('Microsoft.Network/virtualNetworks', variables('virtualNetworkName'))]",  
306     "infranodeSubnetRef" : "[concat(variables('vnetId'), '/subnets/', variables('infranodesubnetName'))]",  
307     "nodeSubnetRef" : "[concat(variables('vnetId'), '/subnets/', variables('nodesubnetName'))]",  
308     "masterSubnetRef" : "[concat(variables('vnetId'), '/subnets/', variables('mastersubnetName'))]",  
309     "rhel" : {
```

Microsoft Azure Government

New > Marketplace > Everything > Template deployment > Custom deployment

MARKETPLACE

1

2

See all

Compute > Networking > Storage > Web + Mobile > Databases > Internet of Things > Enterprise Integration > Monitoring + Management >

RECENT

Storage account - blob, file, table,...

Microsoft

Network security group

Microsoft

Template deployment

Microsoft

Everything

Filter

template deployment

3

Results

| NAME | PUBLISHER | CATEGORY |
|--|--------------------------|------------------------|
| Template deployment | Microsoft | Compute |
| Cisco CSR 1000v - XE 3.16 Deployment with 4 NICs | Cisco Systems, Inc. | Compute |
| Cisco CSR 1000v - XE 3.16 Deployment with 2 NICs | Cisco Systems, Inc. | Compute |
| Cisco CSR 1000v Deployment with 4 NICs | Cisco Systems, Inc. | Compute |
| Cisco CSR 1000v Deployment with 2 NICs | Cisco Systems, Inc. | Compute |
| Check Point R80 Security Management | Check Point | Compute |
| Check Point vSEC Cluster - 2 NIC | Check Point | Compute |
| Check Point vSEC - 2 NIC | Check Point | Compute |
| Cisco ASA v - BYOL 4 NIC | Cisco Systems, Inc. | Compute |
| Couchbase Enterprise (BYOL) | Couchbase | Compute |
| Couchbase Enterprise (Silver Support) | Couchbase | Compute |
| DataStax Enterprise | DataStax, Inc. | Compute |
| Docker EE for Azure (Basic) | Docker, Inc. | Compute |
| Infoblox NIOS for Azure (BYOL) | Infoblox Inc. | Compute |
| VM-Series Next Generation Firewall (BYOL) | Palo Alto Networks, Inc. | Compute |
| Sophos XG Firewall | Sophos | Compute |
| Splunk Enterprise | Splunk | Compute |
| API App | Microsoft | Web + Mobile |
| Runbook | Microsoft | Monitoring + Manage... |
| Web App | Microsoft | Web + Mobile |
| Red Hat OpenShift Container Platform (BYOL) (Staged) | Microsoft | Compute |

4

Create

Blue more

Template deployment

Microsoft

Applications running in Microsoft Azure usually rely on a combination of resources, like databases, servers, and web apps. Azure Resource Manager templates enable you to deploy and manage these resources as a group, using a JSON description of the resources and their deployment settings.

Edit your template with IntelliSense and deploy it to a new or existing resource group.

PUBLISHER

Microsoft

LOGICAPPSUPPORTED

none

USEFUL LINKS

Documentation

4

Create

Custom deployment

Deploy from a custom template

Learn about template deployment

Read the docs

Build your own template in the editor

5

Common templates

Create a Linux virtual machine

Create a Windows virtual machine

Create a web app

Create a SQL database

Load a GitHub quickstart template

Select a template (disclaimer)

Type to start filtering...

Pin to dashboard

Purchase

Edit template
Edit your Azure Resource Manager template

+ Add resource ↑ Quickstart template ↕ Load file ⬇ Download

Parameters (0)

Variables (0)

Resources (0)

```
1 {
2   "$schema": "http://schema.management.azure.com/schemas/2015-01-01/deploymentTemplate.json#",
3   "contentVersion": "1.0.0.0",
4   "parameters": {},
5   "resources": []
6 }
```

Save Discard

Edit template
Edit your Azure Resource Manager template

+ Add resource ↑ Quickstart template ↕ Load file ⬇ Download

Parameters (17)

Variables (56)

Resources (22)

```
1 {
2   "$schema": "https://schema.management.azure.com/schemas/2015-01-01/deploymentTemplate.json#",
3   "contentVersion": "1.0.0.0",
4   "parameters": {
5     "adminUsername": {
6       "type": "string",
7       "minLength": 1,
8       "metadata": {
9         "description": "User name for the Virtual Machine and OpenShift Webconsole."
10      }
11   },
12   "adminPassword": {
13     "type": "securestring",
14     "metadata": {
15       "description": "User password for the OpenShift Webconsole"
16     }
17   },
18   "sshKeyData": {
19     "type": "securestring",
20     "metadata": {
21       "description": "SSH RSA public key file as a string."
22     }
23   },
24   "WildcardZone": {
25     "type": "string",
26     "minLength": 1,
27     "metadata": {
28       "description": "Globally unique wildcard DNS domain for app access."
29     }
30   },
31   "numberOfNodes": {
32     "type": "int",
33     "defaultValue": 3,
34     "minValue": 3,
35     "maxValue": 30,
36     "metadata": {
37       "description": "Number of OpenShift Nodes to deploy (max 30)"
38     }
39   },
40   "image": {
41     "type": "string",
42     "allowedValues": [
43       "rhel"
44     ],
45     "defaultValue": "rhel",
46     "metadata": {
47       "description": "OS to use.Red Hat Enterprise Linux"
48     }
49   },
50   "masterVMSize": {
51     "type": "string",
52     "defaultValue": "Standard_DS4_v2"
```

Save Discard

TEMPLATE

Customized template
22 resources

Edit template



Learn more

BASICS

- * Subscription
- * Resource group ☐ Create new ☐ Use existing
- * Location

SETTINGS

- * Admin Username
- * Admin Password
- * Ssh Key Data
- * Wildcard Zone
- Number Of Nodes
- Image
- Master VM Size
- Infranode VM Size
- Node VM Size
- Rhsm Username Password Or Activation Key
- * RHN User Name
- * RHN Password
- * Subscription Pool Id
- * Ssh Private Data
- * Aad Client Id
- * Aad Client Secret

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TEMPLATE

Customized template
22 resources

Edit template



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- * RHN User Name
- * RHN Password
- * Subscription Pool Id
- * Ssh Private Data
- * Aad Client Id
- * Aad Client Secret
- Metrics

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Outputs

OPENSHIFT CONSOLE URL

<https://masterdnslabel.usgovarizona.cloudapp.usgovc...>



BASTION DNS FQDN

bastiondnsnsmu3kfcdmuda.usgovarizona.cloudapp.us...



OPENSHIFT MASTER SSH

[ssh hwadmin@masterdnslabel.usgovarizona.cloudapp...](https://ssh.hwadmin@masterdnslabel.usgovarizona.cloudapp...)

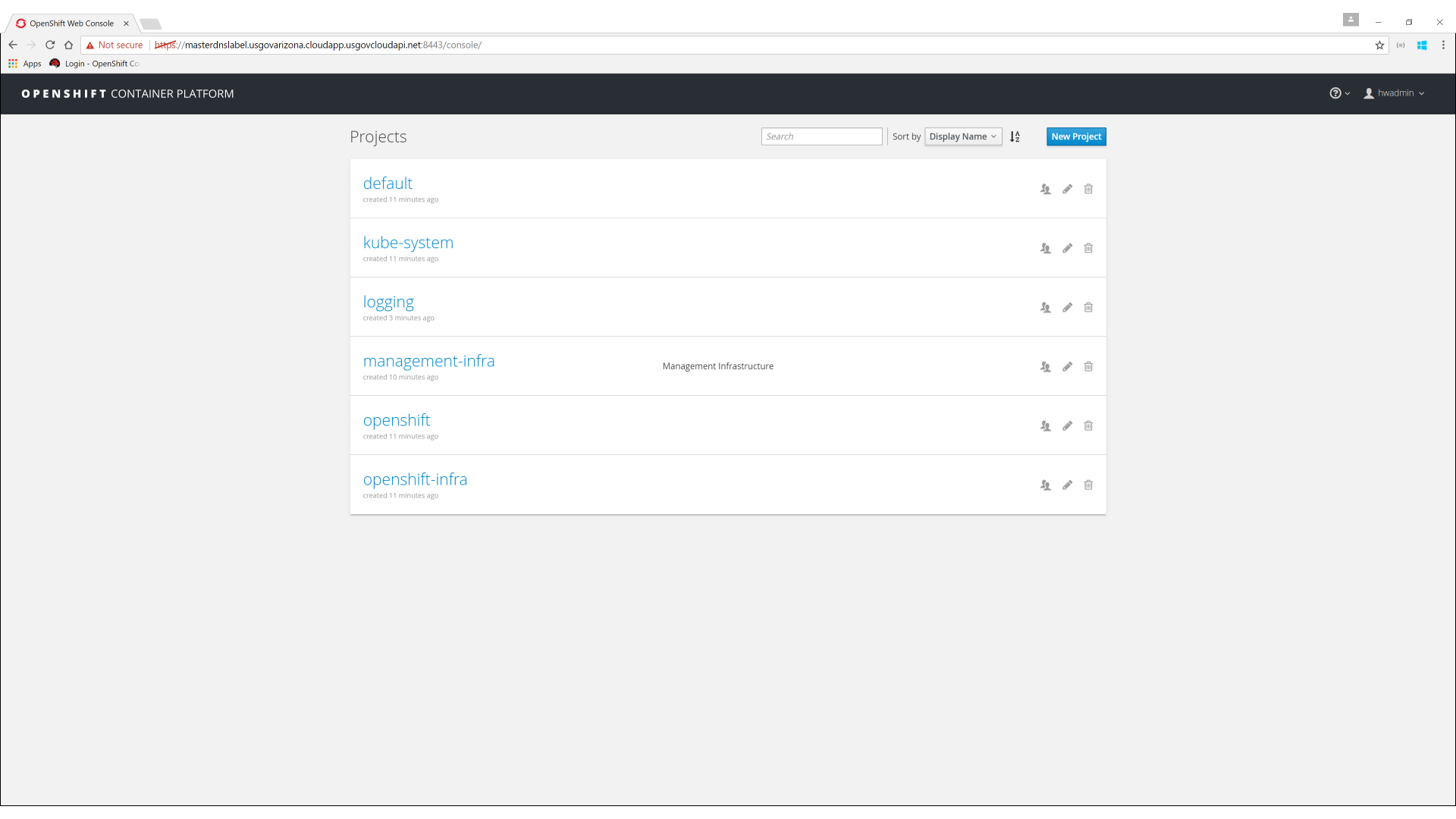




OPENSIFT CONTAINER PLATFORM

| | |
|----------|--|
| Username | <input type="text" value="hwadmin"/> |
| Password | <input type="password" value="*****"/> |
| | <input type="button" value="Log In"/> |

Welcome to the OpenShift Container Platform.



Projects

Search

Sort by

Display Name



New Project

default

created 11 minutes ago



kube-system

created 11 minutes ago



logging

created 3 minutes ago



management-infra

created 10 minutes ago

Management Infrastructure



openshift

created 11 minutes ago



openshift-infra

created 11 minutes ago



OpenShift Web Console

Not securehttps://masterdnslabel.usgovarizona.cloudapp.usgovcloudapi.net:8443/console/project/default/overview

AppsLogin - OpenShift Co

Projects

Project default

Add to project

hwadmin

Overview

Applications

Builds

Resources

Storage

Monitoring

REGISTRY CONSOLE

registry-console

Deployment Config registry-console - 7 minutes ago

CONTAINER: REGISTRY-CONSOLE

Image: openshift3/registry-console

Ports: 9090/TCP

1 pod

No grouped services.

No services are grouped with registry-console. Add a service to group them together.

Group Service

https://docker-registry-default.52.244.206.51.xip.io

docker-registry

Deployment Config docker-registry - 5 minutes ago

CONTAINER: REGISTRY

Image: openshift3/ose-docker-registry:v3.5.5.26

Ports: 5000/TCP

1 pod

No grouped services.

No services are grouped with docker-registry. Add a service to group them together.

Group Service

kubernetes

No deployments or pods.

Service **kubernetes** does not route to any deployments or pods.

router

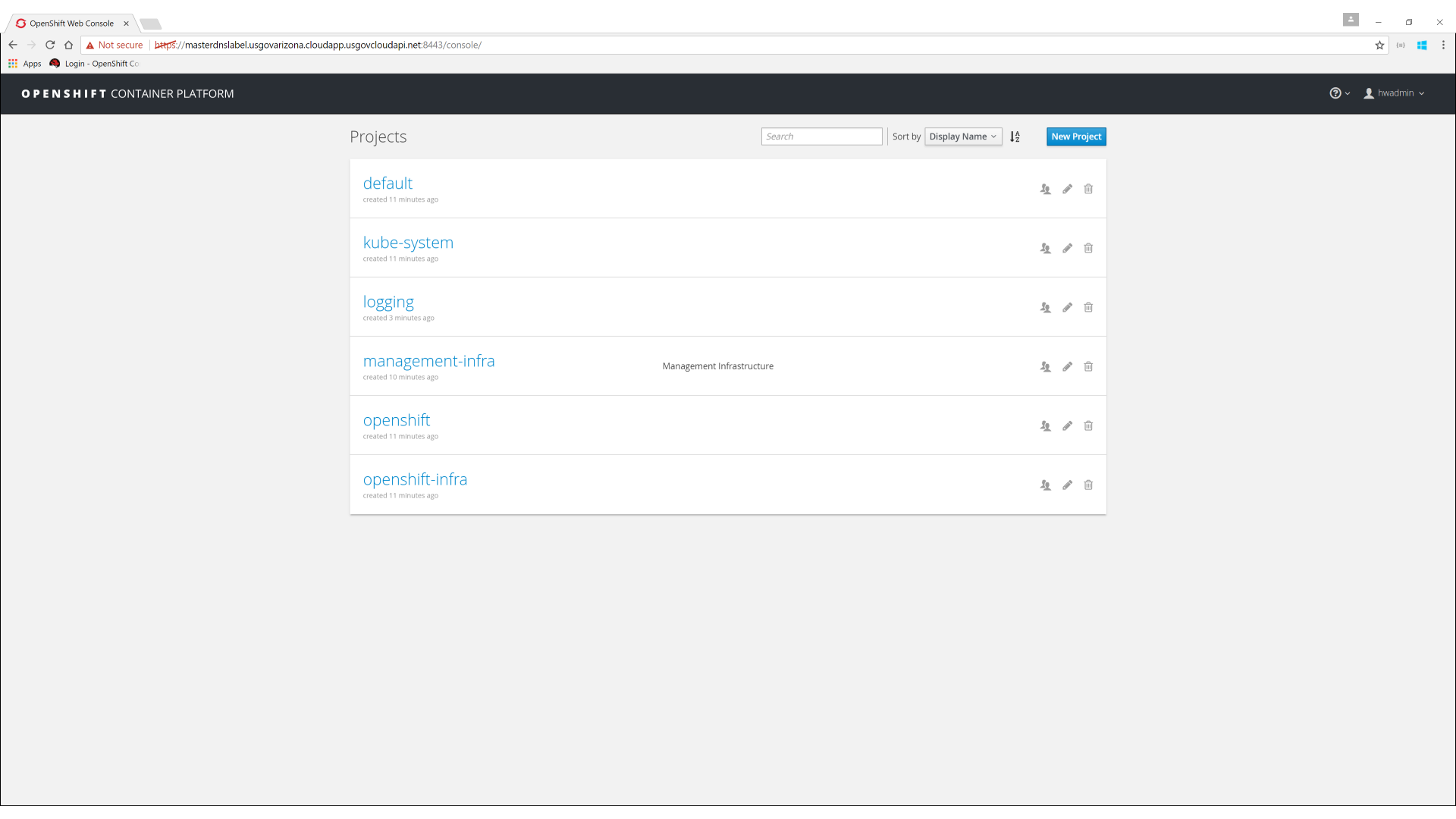
Deployment Config router - 8 minutes ago

CONTAINER: ROUTER

Image: openshift3/ose-haproxy-router:v3.5.5.26

Ports: 80/TCP → 80 , 443/TCP → 443 , 1936/TCP (stats) → 1936

2 pods



Projects

Sort by

Display Name



New Project

default

created 11 minutes ago



kube-system

created 11 minutes ago



logging

created 3 minutes ago



management-infra

created 10 minutes ago

Management Infrastructure



openshift

created 11 minutes ago



openshift-infra

created 11 minutes ago



New Project

*** Name**

A unique name for the project.

Display Name

Description

Create

Cancel

Choose from web frameworks, databases, and other components to add content to your project.

Filter by name or description

Languages



Java

JS

JavaScript

.NET

.NET



Perl



PHP



Python



Ruby

Technologies

Business Process Services

Model, automate, and orchestrate business processes across applications, services, and data.

Continuous Integration & Deployment

Automate the build, test, and deployment of your application with each new code revision.

Data Stores

Store and manage collections of data.

Messaging

Facilitate communication between applications and distributed processes with a messaging server.

Single Sign-On

A centralized authentication server for users to log in, log out, register, and manage user accounts for applications and RESTful web services.

Uncategorized

PHP

Filter by name or description

PHP

BUILDS SOURCE CODE

Build and run PHP 7.0 applications on RHEL 7. For more information about using this builder image, including OpenShift considerations, see <https://github.com/sclorg/s2i-php-container/blob/master/7.0/R...>

Version

7.0 — latest

Select

CakePHP + MySQL (Ephemeral)

An example CakePHP application with a MySQL database. For more information about using this template, including OpenShift considerations, see <https://github.com/openshift/cakephp-ex/blob/master/README...>

Select

CakePHP + MySQL (Persistent)

An example CakePHP application with a MySQL database. For more information about using this template, including OpenShift considerations, see <https://github.com/openshift/cakephp-ex/blob/master/README...>

Select

default

*Database User

cakephp

Database Password

(generated if empty)

CakePHP secret token

(generated if empty)

Set this to a long random string.

CakePHP Security Salt

(generated if empty)

Security salt for session hash.

CakePHP Security Cipher Seed

(generated if empty)

Security cipher seed for session hash.

OPcache Revalidation Frequency

2

How often to check script timestamps for updates, in seconds. 0 will result in OPcache checking for updates on every request.

Custom Composer Mirror URL

The custom Composer mirror URL

Labels

[About Labels](#)

The following labels are being added automatically. If you want to override them, you can do so below.

| | |
|----------|-----------------------|
| template | cakephp-mysql-example |
| app | cakephp-mysql-example |

Each label is applied to each created resource.

| Name | Value | |
|------|-------|---|
| | | × |

[Add Label](#)

CreateCancel

Application created. [Continue to overview](#).



The following service(s) have been created in your project: cakephp-mysql-example, mysql.

For more information about using this template, including OpenShift considerations, see <https://github.com/openshift/cake-ex/blob/master/README.md>.

Manage your app

The web console is convenient, but if you need deeper control you may want to try our command line tools.

Command line tools

[Download and install](#) the `oc` command line tool. After that, you can start by logging in, switching to this particular project, and displaying an overview of it, by doing:

```
oc login https://masterdnslabel.usgovarizona.cloudapp.usgovcloudapi.net:8443
oc project govtest
oc status
```

For more information about the command line tools, check the [CLI Reference](#) and [Basic CLI Operations](#).

Applied Parameter Values

These parameters often include things like passwords. If you will need to reference these values later, copy them to a safe location. Parameters SOURCE_REPOSITORY_REF, CONTEXT_DIR, APPLICATION_DOMAIN, GITHUB_WEBHOOK_SECRET, DATABASE_PASSWORD, CAKEPHP_SECRET_TOKEN, CAKEPHP_SECURITY_SALT, CAKEPHP_SECURITY_CIPHER_SEED, COMPOSER_MIRROR were generated automatically.

[Show parameter values](#)

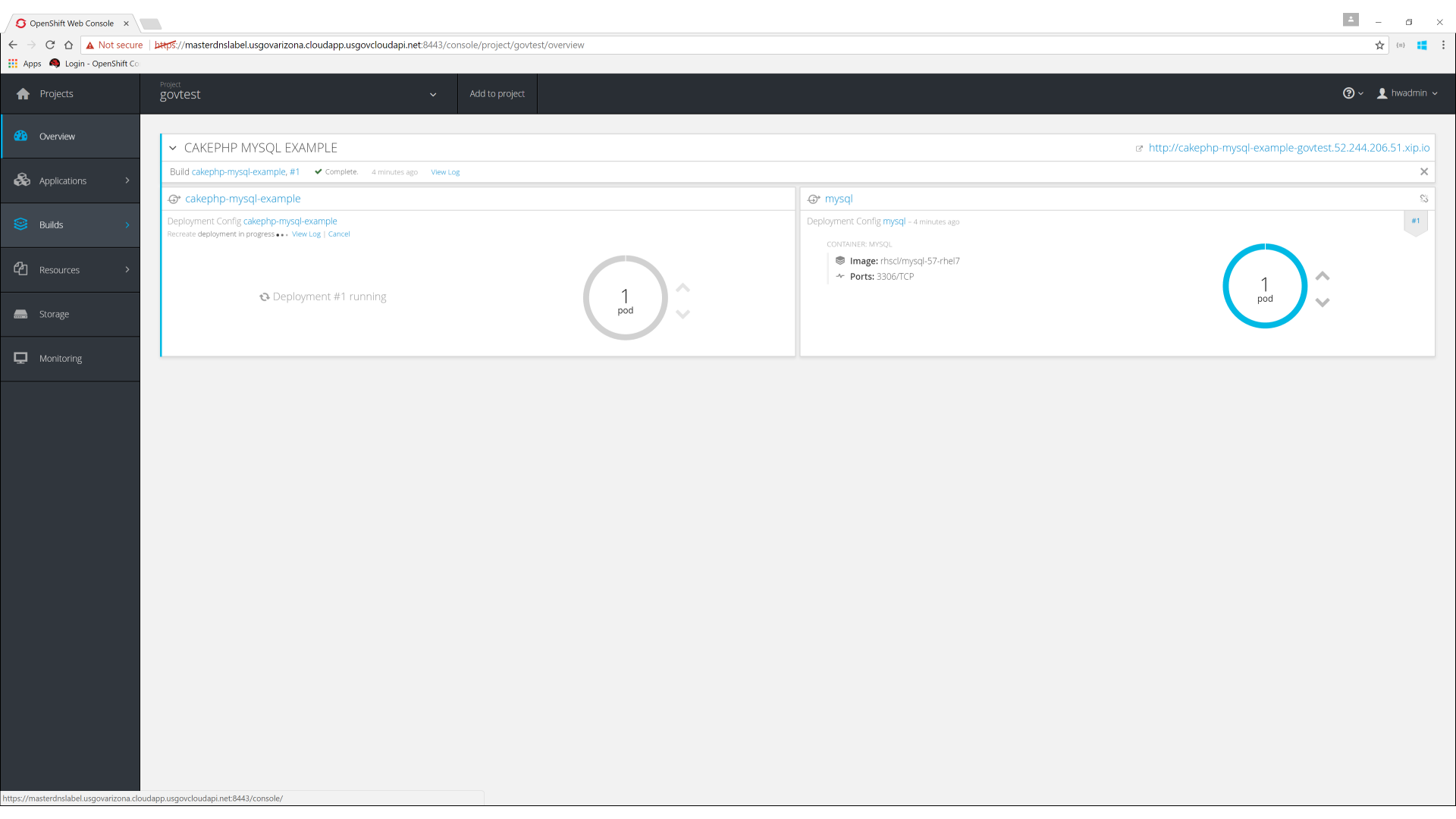
Making code changes

A GitHub [webhook trigger](#) has been created for the **cakephp-mysql-example** build config.

You can now set up the webhook in the GitHub repository settings if you own it, in <https://github.com/openshift/cakephp-ex/settings/hooks>, using the following payload URL:

`https://masterdnslabel.usgovarizona.cloud`





OpenShift Web Console

← → ↻ ⚙

Not secure | https://masterdnslabel.usgovarizona.cloudapp.usgovcloudapi.net:8443/console/project/govtest/overview

☆ (en) 🌐 ⋮

Apps 🔍

Login - OpenShift Co

🏠 Projects

Project govtest

▼

Add to project

🔍

hwadmin ▼

🌐 Overview

🔗 Applications >

🏗 Builds >

📄 Resources >

💾 Storage

🖥 Monitoring

📄 CAKEPHP MYSQL EXAMPLE

🔗 http://cakephp-mysql-example-govtest.52.244.206.51.xip.io

Build cakephp-mysql-example, #1

✔ Complete

5 minutes ago

View Log


🔗 cakephp-mysql-example

Deployment Config cakephp-mysql-example - 2 minutes ago

CONTAINER: CAKEPHP-MYSQL-EXAMPLE

📦 Image: gov/test/cakephp-mysql-example

🔌 Ports: 8080/TCP



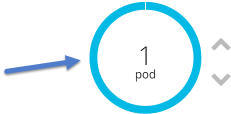
🔗 mysql

Deployment Config mysql - 5 minutes ago

CONTAINER: MYSQL

📦 Image: rhsc/mysql-57-rhel7

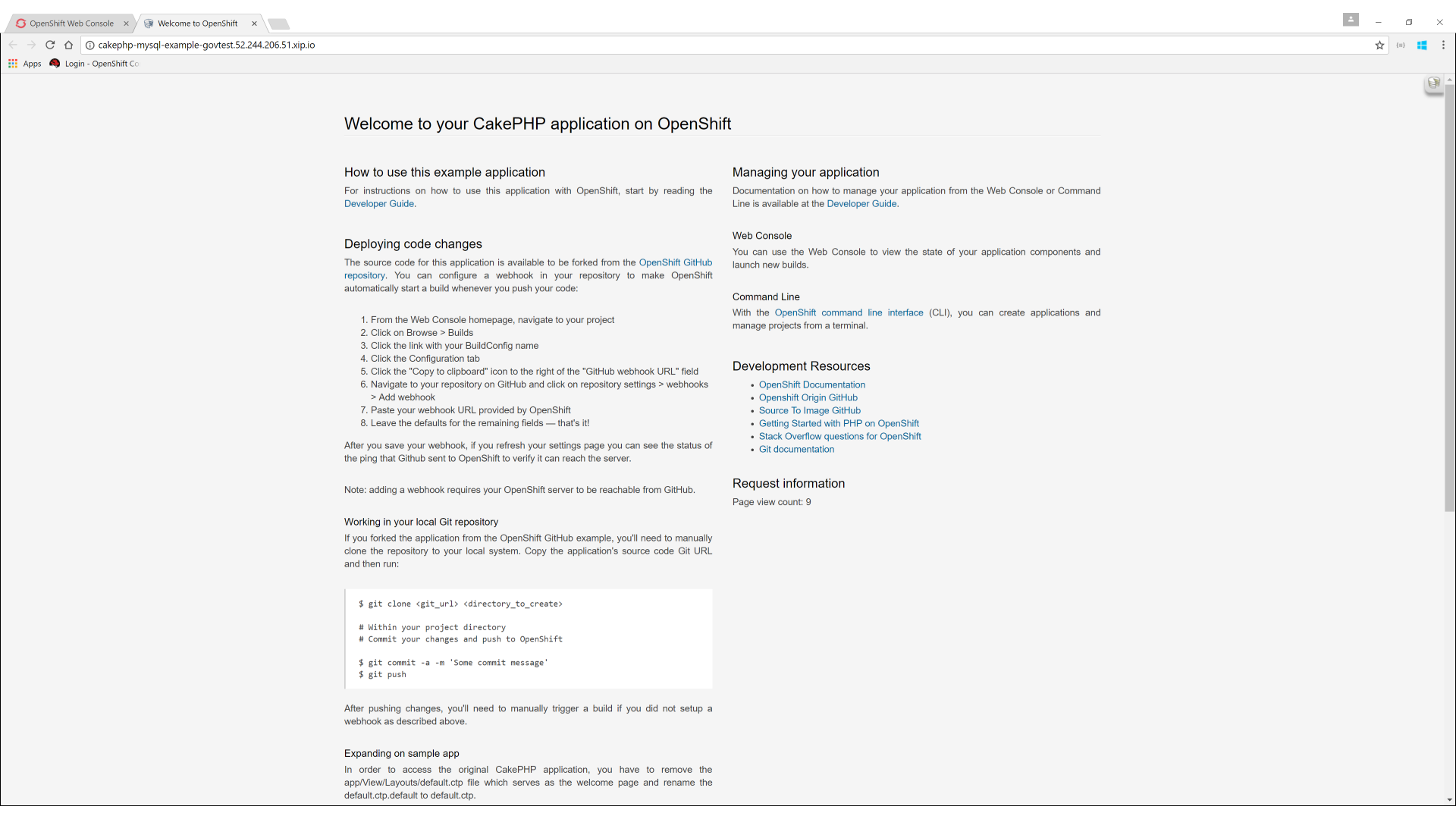
🔌 Ports: 3306/TCP



🖥

11:37 PM

7/10/2017



Welcome to your CakePHP application on OpenShift

How to use this example application

For instructions on how to use this application with OpenShift, start by reading the [Developer Guide](#).

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. Click the link with your BuildConfig name
4. Click the Configuration tab
5. Click the "Copy to clipboard" icon to the right of the "GitHub webhook URL" field
6. Navigate to your repository on GitHub and click on repository settings > webhooks > Add webhook
7. Paste the webhook URL provided by OpenShift
8. Leave the defaults for the remaining fields — 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.

Expanding on sample app

In order to access the original CakePHP application, you have to remove the `app/View/Layouts/default.ctp` file which serves as the welcome page and rename the `default.ctp.default` to `default.ctp`.

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 PHP on OpenShift](#)
- [Stack Overflow questions for OpenShift](#)
- [Git documentation](#)

Request information

Page view count: 9

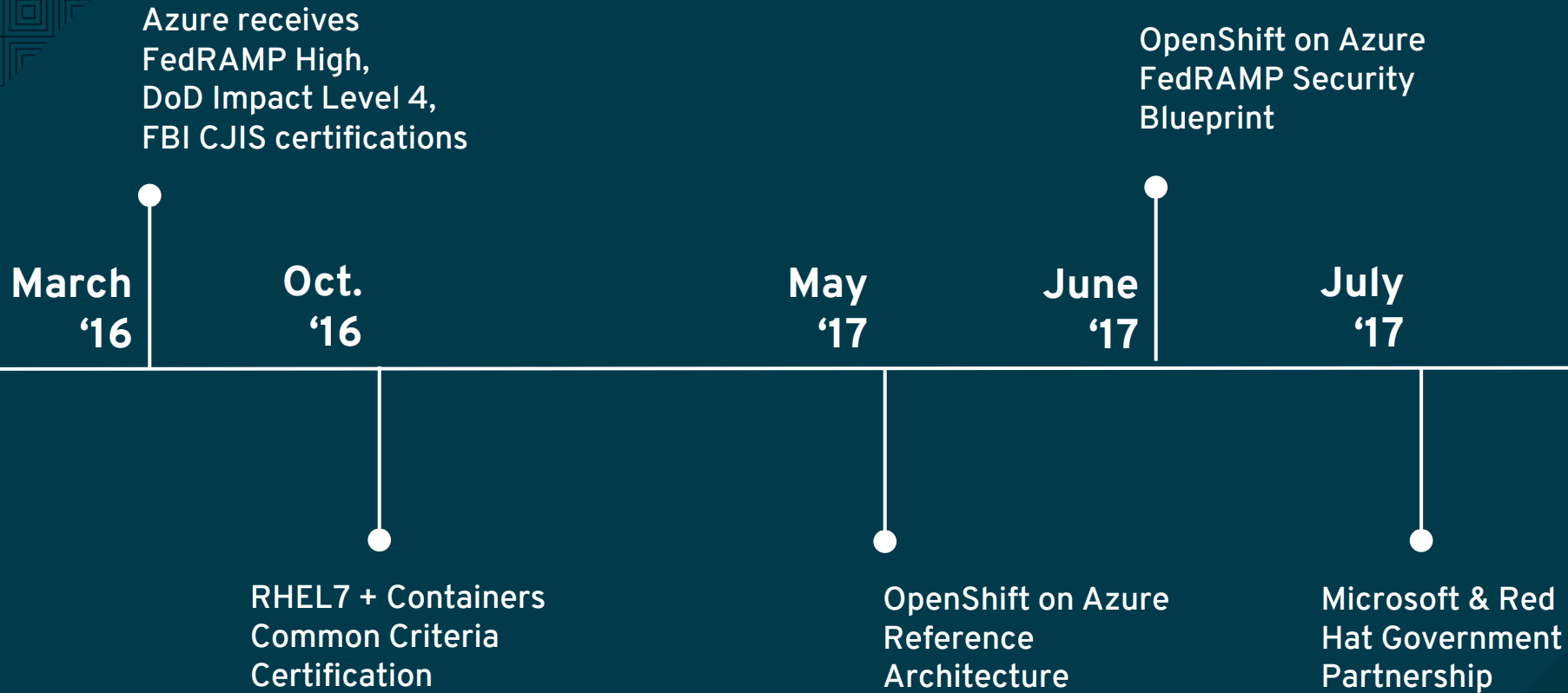
Accrediting OpenShift On Azure

Shawn Wells

Office of the Chief Technologist

U.S. Public Sector

shawn@redhat.com || 443-534-0130



Azure for Government Certifications

DoD Impact Level 4
ITAR Readiness
FedRAMP High

- Allows all DoD and mission partners to leverage Azure for “Controlled Unclassified Information”
- aka “FOUO”

Azure for Government Certifications

DoD Impact Level 4
ITAR Readiness
FedRAMP High

- Store and process regulated data.
- Azure facilities and personnel US-based.

Azure for Government Certifications

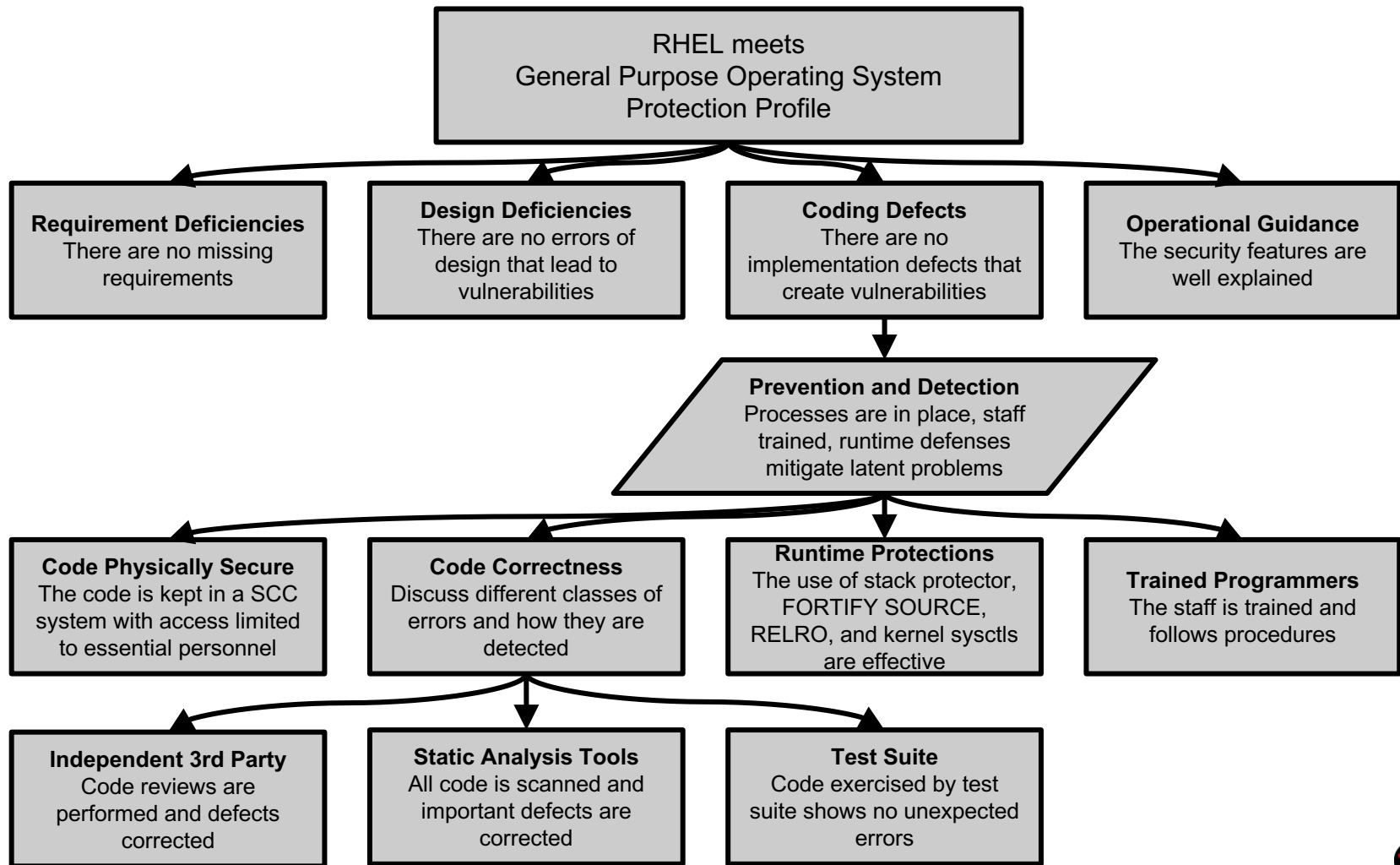
DoD Impact Level 4
ITAR Readiness
FedRAMP High

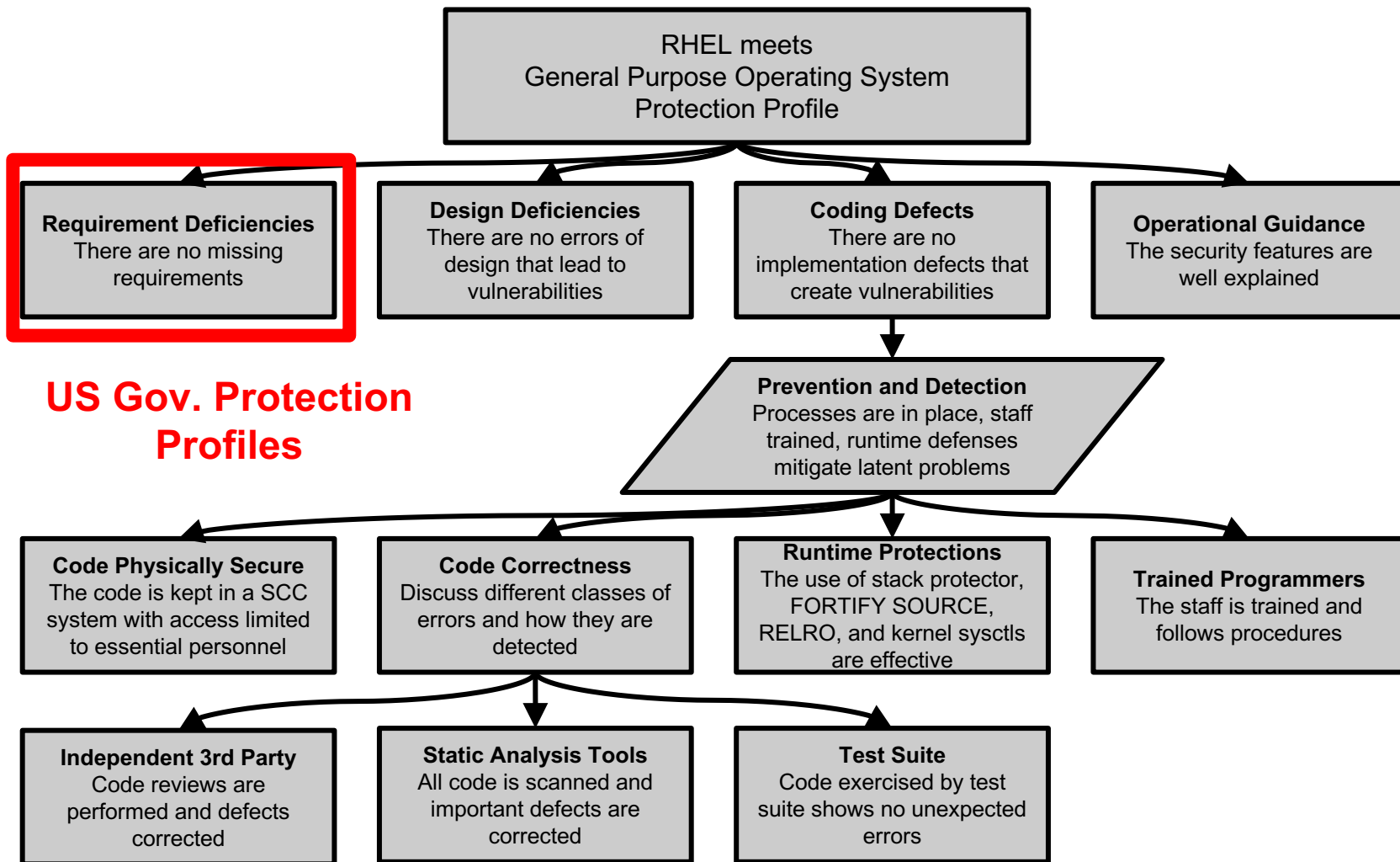
- Focus for today.
- GSA-estimated 50% of \$80B Federal IT budget falls under 'FedRAMP High'

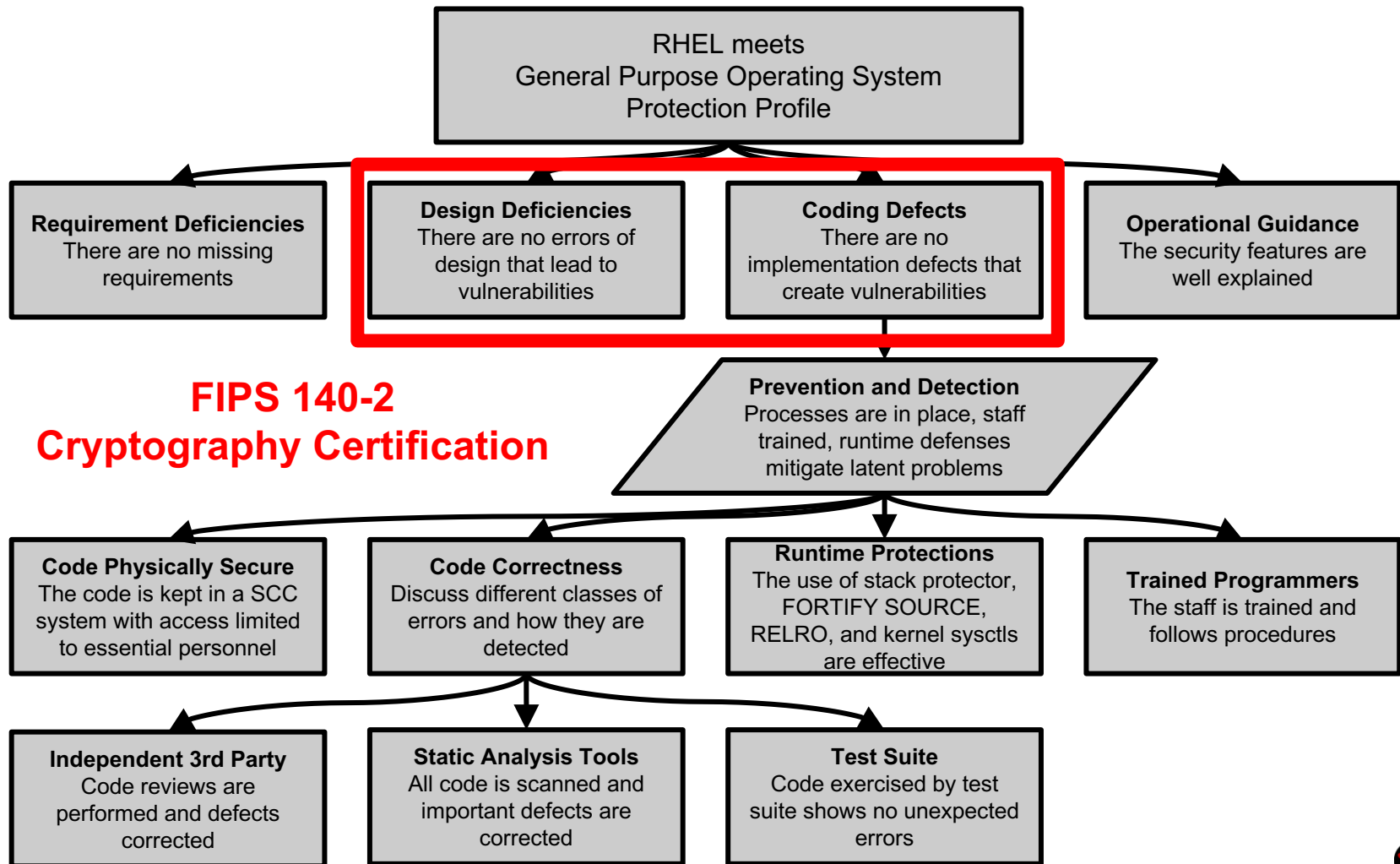
Red Hat Certifications

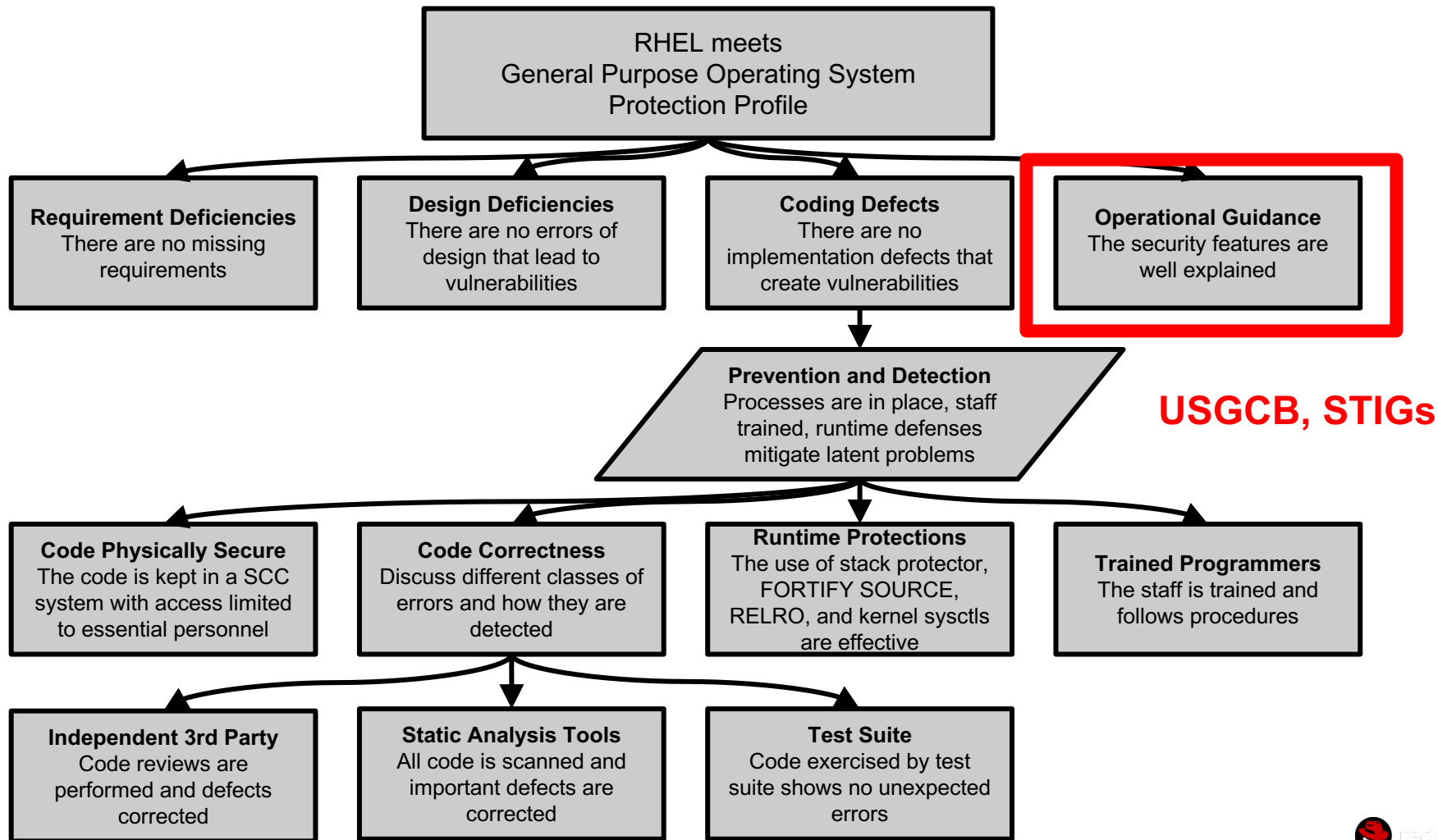
Common Criteria

- RHEL 7.1 certified to EAL4+.
- 3rd party lab verifies security functionality.
- Certified multi-tenancy capabilities.





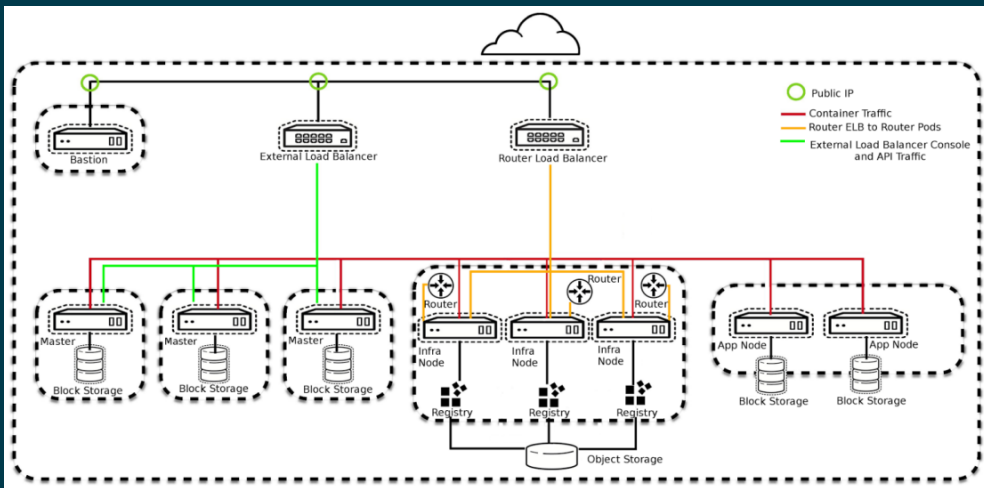




PUTTING IT TOGETHER:

**OpenShift On Azure
Reference Architecture
+
Security Blueprint**

OpenShift on Azure Reference Architecture



Provides a comprehensive, step-by-step build of an *enterprise* deployment of OpenShift v3.5 on Azure.

- [Public documentation](#)
- Automation scripts [on GitHub](#)

FedRAMP Templates | FedRAM x

https://www.fedramp.gov/resources/templates-2016/



FR

FedRAMP





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FedRAMP Templates

Readiness Assessment Phase

| Template | Download | Updated |
|---|---|----------|
| + FedRAMP High Readiness Assessment Report (RAR) Template |  | 6/6/2017 |
| + FedRAMP Moderate Readiness Assessment Report (RAR) Template |  | 6/6/2017 |

Initial Authorization Phase

| Template | Download | Updated |
|---|---|----------|
| Initial Authorization Package Checklist | | |
| + FedRAMP Initial Authorization Package Checklist |  | 3/9/2017 |
| Document: System Security Plan (SSP) | | |
| + FedRAMP System Security Plan (SSP) High Baseline Template |  | 6/6/2017 |
| + FedRAMP System Security Plan (SSP) Moderate Baseline Template |  | 6/6/2017 |
| + FedRAMP System Security Plan (SSP) Low Baseline Template |  | 6/6/2017 |

→

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FedRAMP System Security Plan (SSP) Moderate Baseline Template

FR

FedRAMP

CSP Name

Information System Name

Version ##

Version Date

|

Controlled Unclassified Information

Page 1 of 316

Focus

90%

IA-2 User Identification and Authentication (L) (M) (H)

The information system uniquely identifies and authenticates organizational users (or processes acting on behalf of organizational users).

| IA-2 | Control Summary Information |
|---|-----------------------------|
| Responsible Role: | |
| Implementation Status (check all that apply): <input type="checkbox"/> Implemented <input type="checkbox"/> Partially implemented <input type="checkbox"/> Planned <input type="checkbox"/> Alternative implementation <input type="checkbox"/> Not applicable | |
| Control Origination (check all that apply): <input type="checkbox"/> Service Provider Corporate <input type="checkbox"/> Service Provider System Specific <input type="checkbox"/> Service Provider Hybrid (Corporate and System Specific) <input type="checkbox"/> Configured by Customer (Customer System Specific) <input type="checkbox"/> Provided by Customer (Customer System Specific) <input type="checkbox"/> Shared (Service Provider and Customer Responsibility) <input type="checkbox"/> Inherited from pre-existing FedRAMP Authorization for Click here to enter text. , Date of Authorization | |
| IA-2 What is the solution and how is it implemented? | |
| | |

OpenShift on Azure Security Blueprint

- ATO paperwork required for all cloud systems
- We went through the ~300pg GSA SSP template and pre-populated answers

Microsoft Azure Blueprint
Control Implementation Guidance

Red Hat OpenShift v3 on Microsoft Azure for Government

Version 1.0

06/01/2017|

OpenShift on Azure Security Blueprint

Some controls are implemented in whole or in part by Microsoft Azure

| AC-18 What is the solution and how is it implemented? | |
|---|---|
| Part a | Microsoft Azure Microsoft Azure implements this control on behalf of both PaaS and IaaS customers. See section 14.1.14. |
| Part b | Microsoft Azure Microsoft Azure implements this control on behalf of both PaaS and IaaS customers. See section 14.1.14. |

OpenShift on Azure Security Blueprint

Others are inherently met by use of Red Hat, e.g. FIPS for disk encryption

IA-7 What is the solution and how is it implemented?

Customer Responsibility

<Administrative access to OpenShift nodes is performed over SSH. To limit SSH ciphers to those algorithms which are FIPS-approved, update the following line in /etc/ssh/sshd_config:

Ciphers aes128-ctr,aes192-ctr,aes256-ctr>

<The OpenShift Console, which is the web interface to the system, converts incoming authentication requests to HTTPS automatically.>

OpenShift on Azure Security Blueprint

For customer responsibilities, we documented what a successful response would be:

SI-2 (2) What is the solution and how is it implemented?


Customer Responsibility

<The customer will be required to employ automated mechanisms on a monthly basis to determine the state of information system components with regard to flaw remediation on their information systems as required by their organization's security policy. A successful response will address the customer's use of automated tools such as Nessus to preform periodic and on-demand scans through their system to determine the state of system compenents with regard to flaw remediation.>

FedRAMP Templates | FedRAM xReleases · opencontrol/RedHat x

Shawn

← → ↺ ⌂ GitHub, Inc. [US] https://github.com/opencontrol/RedHat/releases ☆ ⓘ ⋮

 This repository Search Pull requests Issues Marketplace Gist 🔔 + 👤

opencontrol / RedHat

👁 Unwatch 5 ⭐ Star 5 🍴 Fork 2

<> Code ⓘ Issues 5 🔗 Pull requests 0 📁 Projects 0 📖 Wiki ⚙ Settings Insights ▾

Releases Tags

Draft a new release

Latest release

🏷 v1.0.0 🔑 973fa72

Red Hat OpenControl Documentation v1.0.0

👤 shawndwells released this on May 18 · 84 commits to master since this release

This initial release contains content for OpenShift Container Platform v3.0.

Downloads

📦 OpenShift_on_Azure_Blueprint_SSP.docx858 KB

📄 Source code (zip)

📄 Source code (tar.gz)

259 lines (235 sloc) | 10.1 KB

```
1  ---
2  documentation_complete: false
3  name: Audit and Accountability
4  schema_version: 3.0.0
5  satisfies:
6
7  - control_key: AU-4 (1)
8    standard_key: NIST-800-53
9    covered_by: []
10   implimentation_status: none
11   narrative:
12     - text: |
13         '/*
14         OpenShift Administrators are responsible for configuring the
15         offloading of audit records to a central facility. A successful
16         control response will outline how audit records are dispatched
17         to aggregation points.
18         */'
19
```

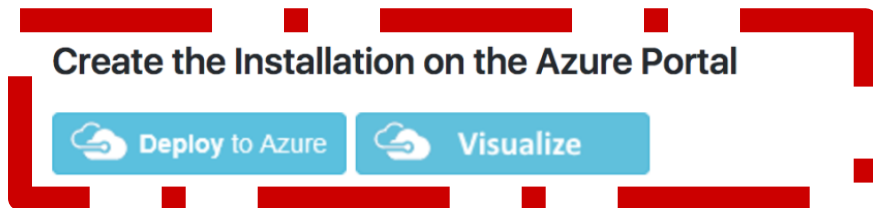
Red Hat OpenShift Container Platform on Azure

When creating the Red Hat OpenShift Container Platform on Azure, you will need a SSH RSA key for access.

SSH Key Generation

1. [Windows](#)
2. [Linux](#)
3. [Mac](#)

Create the Installation



click

Development Branch





THANK YOU