Red Hat Connect for Technology Partners

Getting Started Guide - OpenStack / NFV Zone

Prepared for: Product Managers and Technical Staff

Draft Version: 20180913 (preliminary release)

Table of Contents

Introduction

Welcome to Red Hat Connect for Technology Partners. This guide provides instructions on how to register for the Red Hat Connect for Technology Partner program.

This document will also guide you through the process of obtaining a “Red Hat Certified” designation for an OpenStack plugin that you have made deployable via a Linux container using Red Hat technology.

The process involves preparing your containerized application so that it meets certain criteria as specified in the Red Hat Certification Policy Guide, submitting it to Red Hat scan utility for certification, and publishing it so that the containerized application is available for consumption.

It should be noted that the ability to maintain the certification requires a commitment to maintaining the trustworthiness of the container, i.e., updating it as needed for security or other reasons.

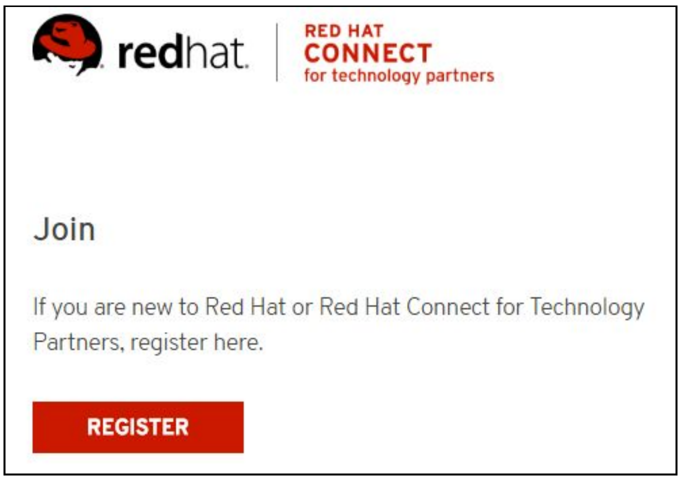
NOTE: This document only covers partner registration with Red Hat Connect and the image certification scanning process for out of tree OpenStack plugins.

Functional testing and Red Hat OpenStack integration are out of scope of this document.

Register for RHC4TP & Request Technology Partnership

Go to connect.redhat.com and click *LOG IN* at the upper right of the page.

Click *REGISTER*.



RED HAT CONNECT for technology partners

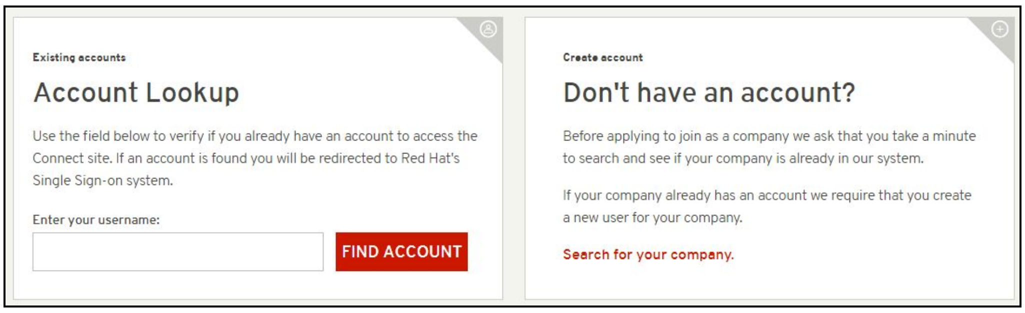
Join

If you are new to Red Hat or Red Hat Connect for Technology Partners, register here.

Check to see if you have an existing account by searching your Red Hat account login Username.

If you do not have an existing User Account, check if your Company has an existing account by clicking *SEARCH FOR YOUR COMPANY.*

Note: If you find your company in the search field, please email connect@redhat.com to find out who the Org Admin is for your company, so they can add you to the existing account.



Existing accounts

Account Lookup

Use the field below to verify if you already have an account to access the Connect site. If an account is found you will be redirected to Red Hat's Single Sign-on system.

Enter your username:

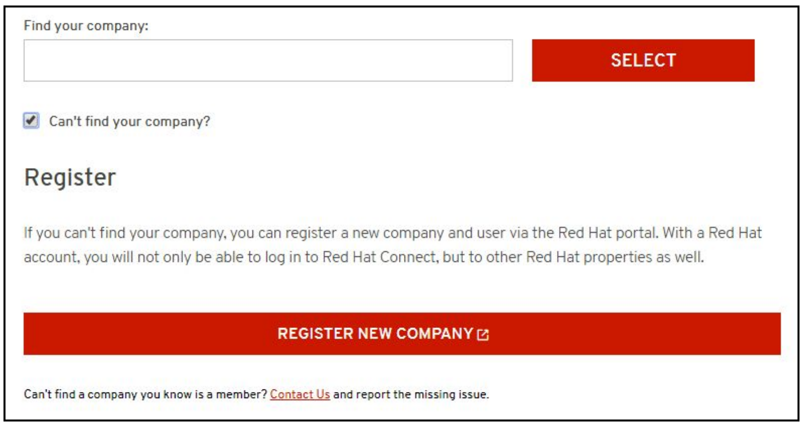
Create account

Don't have an account?

Before applying to join as a company we ask that you take a minute to search and see if your company is already in our system.

If your company already has an account we require that you create a new user for your company.

If your company does not have an existing account, click *CAN'T FIND YOUR COMPANY* and then click *REGISTER NEW COMPANY.*


Find your company:

SELECT

☑ Can't find your company?

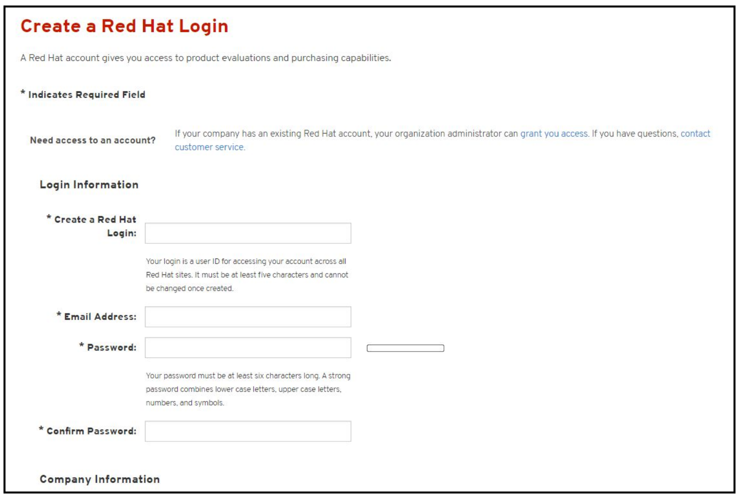
Register

If you can't find your company, you can register a new company and user via the Red Hat portal. With a Red Hat account, you will not only be able to log in to Red Hat Connect, but to other Red Hat properties as well.

REGISTER NEW COMPANY

Can't find a company you know is a member? Contact Us and report the missing issue.

Fill in all required fields and *SUBMIT*.


Create a Red Hat Login

A Red Hat account gives you access to product evaluations and purchasing capabilities.

* Indicates Required Field

Need access to an account? If your company has an existing Red Hat account, your organization administrator can grant you access. If you have questions, contact customer service.

Login Information

* Create a Red Hat Login:

Your login is a user ID for accessing your account across all Red Hat sites. It must be at least five characters and cannot be changed once created.

* Email Address:

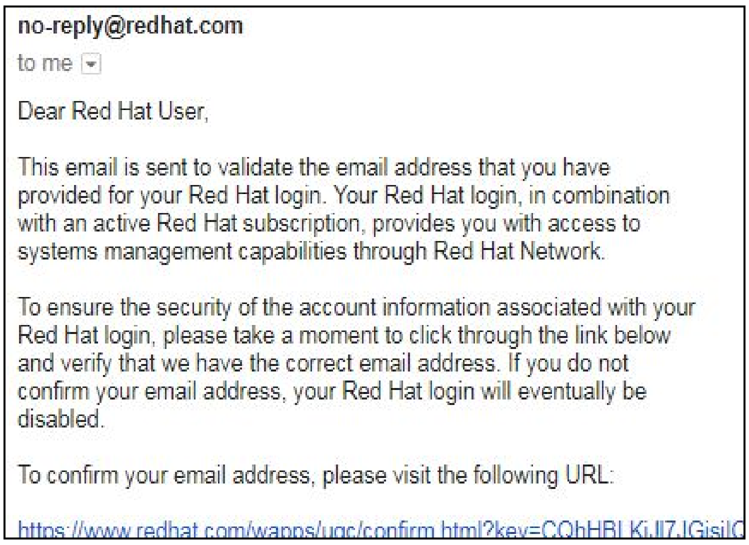
* Password:

Your password must be at least six characters long. A strong password combines lower case letters, upper case letters, numbers, and symbols.

* Confirm Password:

Company Information

A confirmation Email will be sent (example email)


no-reply@redhat.com

to me

Dear Red Hat User,

This email is sent to validate the email address that you have provided for your Red Hat login. Your Red Hat login, in combination with an active Red Hat subscription, provides you with access to systems management capabilities through Red Hat Network.

To ensure the security of the account information associated with your Red Hat login, please take a moment to click through the link below and verify that we have the correct email address. If you do not confirm your email address, your Red Hat login will eventually be disabled.

To confirm your email address, please visit the following URL:

https://www.redhat.com/wapps/ugc/confirm.html?key=CQhHBLKiJI7JGisIC

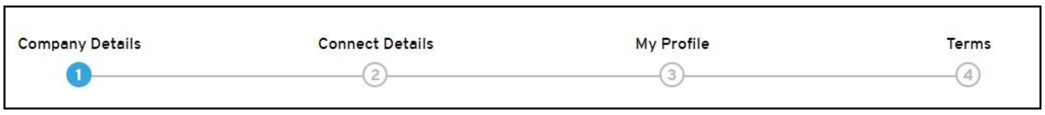
Once your Email has been confirmed, log in to your RHC4TP account at connect.redhat.com. You will be redirected to the *Getting Started* page.

Note: If you are not redirected, please click *MANAGE COMPANY* and then click *BECOME A PARTNER*

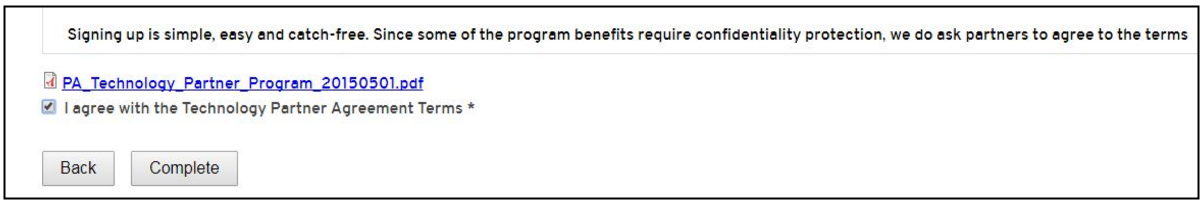
You will now be required to complete the following sections (clicking *Next* after filling in the required information):

Company Details

Connect Details
My Profile



Once the Profile section is complete, you will need to review and accept the Technology Partner Program Agreement.


Signing up is simple, easy and catch-free. Since some of the program benefits require confidentiality protection, we do ask partners to agree to the terms

PA_Technology_Partner_Program_20150501.pdf

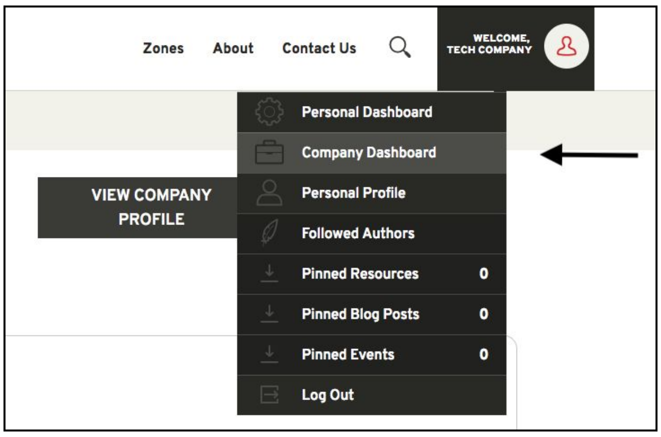
☑ I agree with the Technology Partner Agreement Terms *

Request Zone Access

When you're ready to certify your product on Red Hat Software, you will need to request Zone access and then create a Certification Project.

Go to connect.redhat.com and click *LOG IN* at the upper right of the page.

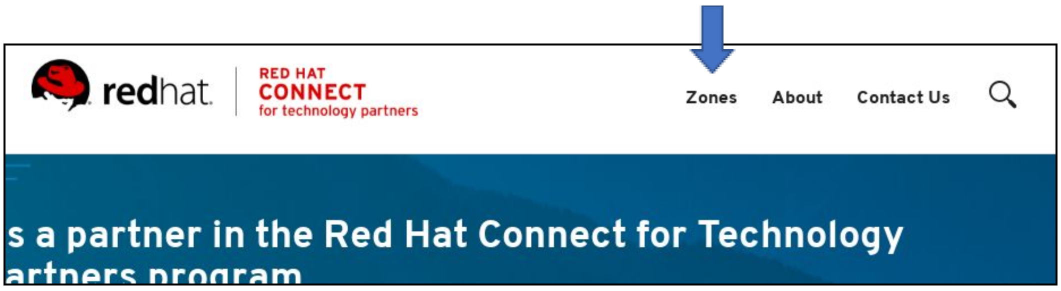
Click on *COMPANY DASHBOARD*



Then select *EDIT COMPANY PROFILE*

Complete all mandatory fields marked with an * and then click *SUBMIT* at the end of the page

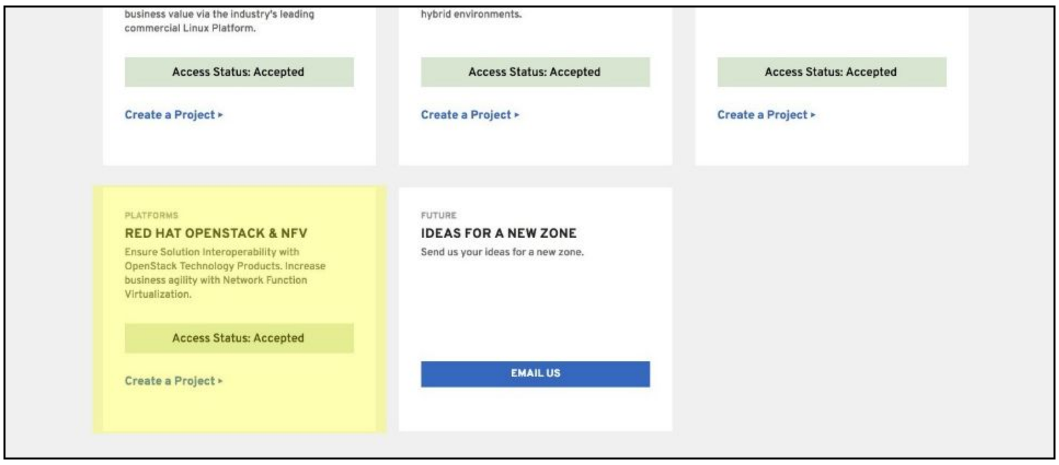
Click on *ZONES* at the top of the page.


redhat.
RED HAT CONNECT for technology partners
Zones
About
Contact Us
s a partner in the Red Hat Connect for Technology
artners program

Scroll down to Join a Zone section.

Under the Zone you wish to join, click *APPLY FOR ZONE ACCESS*.

For the OpenStack Plugins, you need to select OpenStack & NFV.



business value via the industry's leading commercial Linux Platform.

hybrid environments.

PLATFORMS

RED HAT OPENSTACK & NFV

Ensure Solution Interoperability with OpenStack Technology Products. Increase business agility with Network Function Virtualization.

FUTURE

IDEAS FOR A NEW ZONE

Send us your ideas for a new zone.

At this point you will via Email upon approval of your Zone Request.

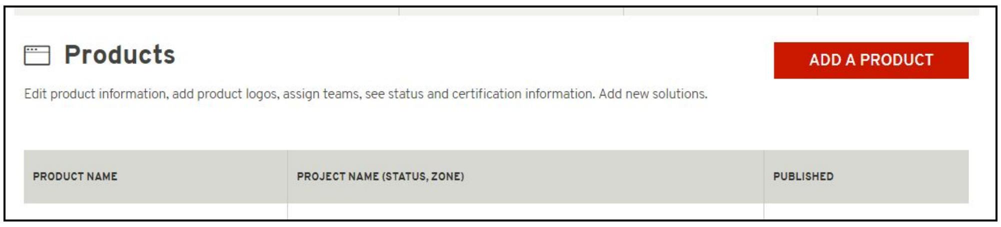
Add a Product

Log in to your RHC4TP account at connect.redhat.com.

Select the *Human* icon at the top right of the screen and select *Company Dashboard* from the dropdown menu.

Scroll down to *Products* section.

Click *ADD A PRODUCT*.



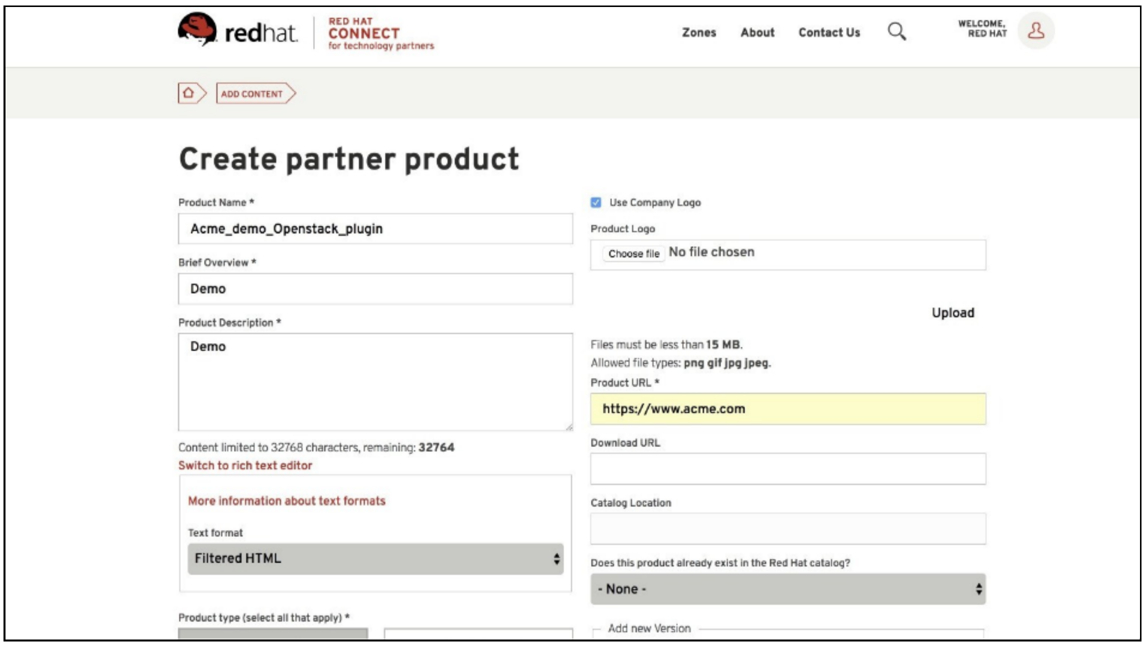
Products

Edit product information, add product logos, assign teams, see status and certification information. Add new solutions.

PRODUCT NAME	PROJECT NAME (STATUS, ZONE)	PUBLISHED

Fill in all required information and click *SUBMIT*.

Note: The product information you enter will be used to feed the certified product catalog after certification is complete and approved by Red Hat, therefore verify all information is correct.



Create partner product

Product Name * Acme_demo_Openstack_plugin

Brief Overview * Demo

Product Description * Demo

Content limited to 32768 characters, remaining: **32764**

Switch to rich text editor

More information about text formats

Text format: Filtered HTML

Product type (select all that apply) *

☑ Use Company Logo

Product Logo: Choose file No file chosen

Upload

Files must be less than **15 MB**.

Allowed file types: **png gif jpg jpeg**.

Product URL * https://www.acme.com

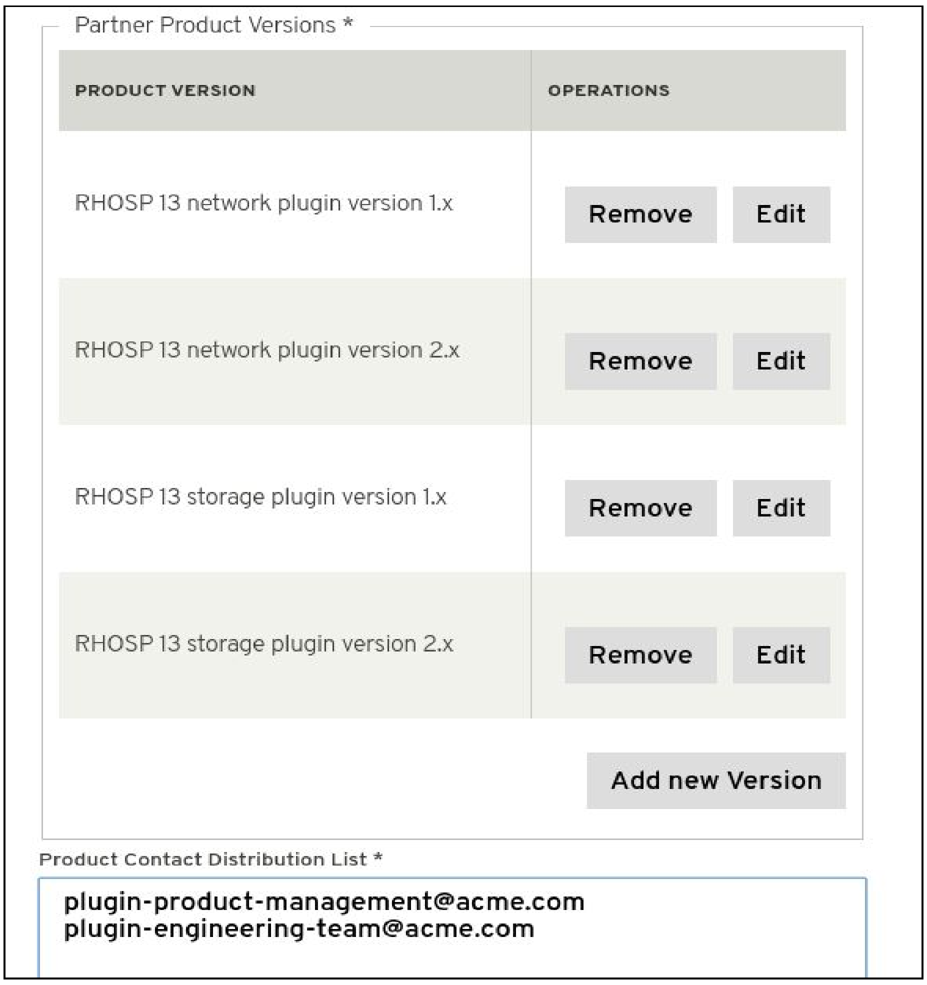
Download URL

Catalog Location

Does this product already exist in the Red Hat catalog? - None -

Add new Version

Note: If the plugin comes in multiple versions, you need to specify the different versions in order to create a Project for each version.



Partner Product Versions *

PRODUCT VERSION	OPERATIONS
RHOSP 13 network plugin version 1.x	Remove Edit
RHOSP 13 network plugin version 2.x	Remove Edit
RHOSP 13 storage plugin version 1.x	Remove Edit
RHOSP 13 storage plugin version 2.x	Remove Edit

Product Contact Distribution List *

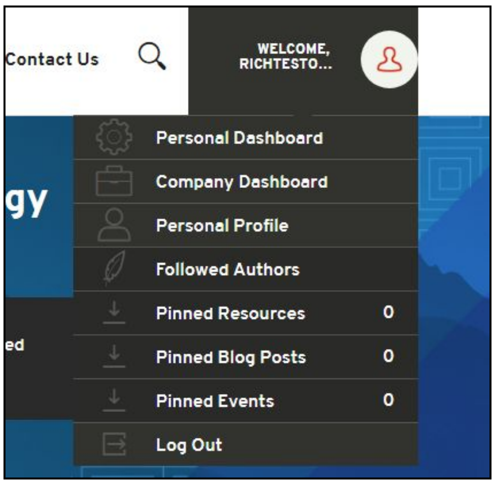
plugin-product-management@acme.com
plugin-engineering-team@acme.com

Note: The Product Contact Distribution List must contain at least one email.

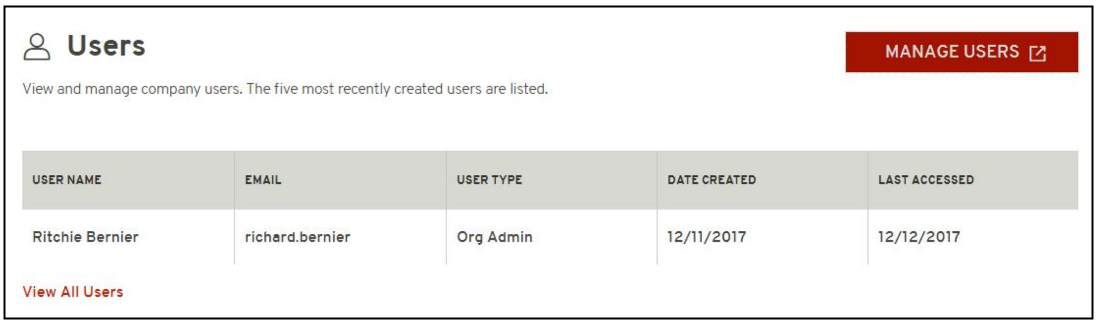
Add a New User to the RHC4TP Account

Login to your RHC4TP account at connect.redhat.com

Click on the *Human* icon at the top right of the page and select *Company Dashboard* from the drop-down menu



Scroll down to *Users* section and click *MANAGE USERS.*



Users

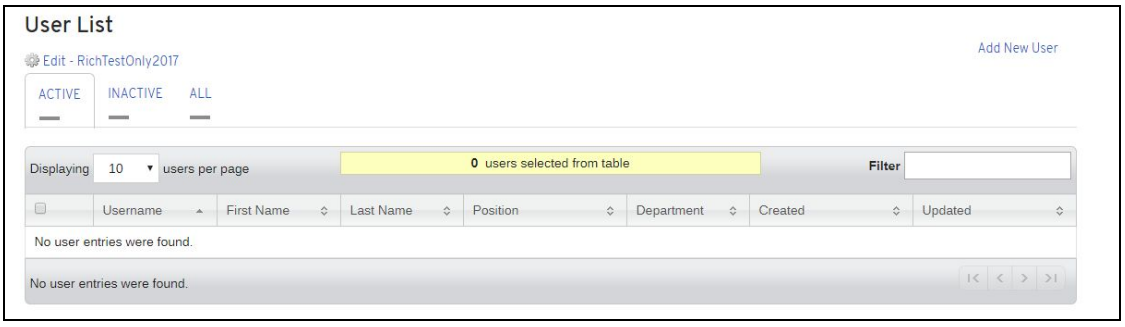
MANAGE USERS

View and manage company users. The five most recently created users are listed.

USER NAME	EMAIL	USER TYPE	DATE CREATED	LAST ACCESSED
Ritchie Bernier	richard.bernier	Org Admin	12/11/2017	12/12/2017

View All Users

Click *ADD NEW USER*



User List

Edit - RichTestOnly2017

Add New User

ACTIVE INACTIVE ALL

Displaying 10 users per page

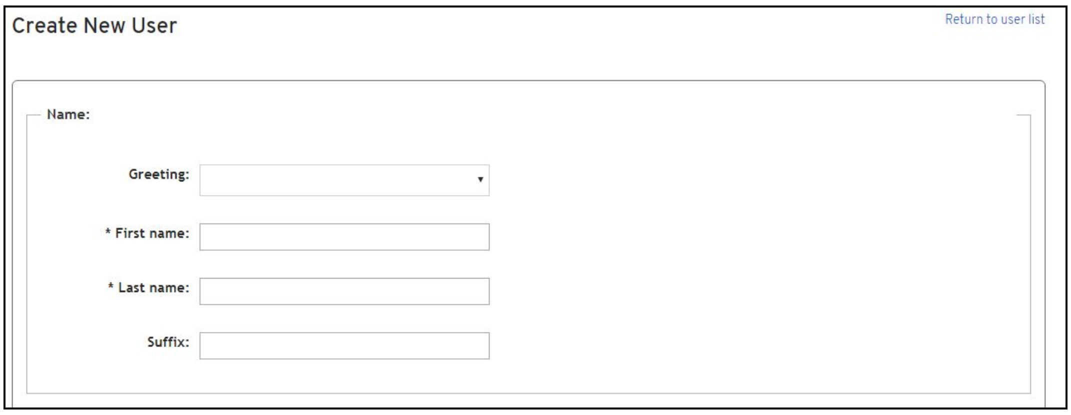
0 users selected from table

Filter

□	Username	First Name	Last Name	Position	Department	Created	Updated
No user entries were found.							

No user entries were found.

Fill in required information, then click *SAVE.*



Create New User

Return to user list

Name:

Greeting:

* First name:

* Last name:

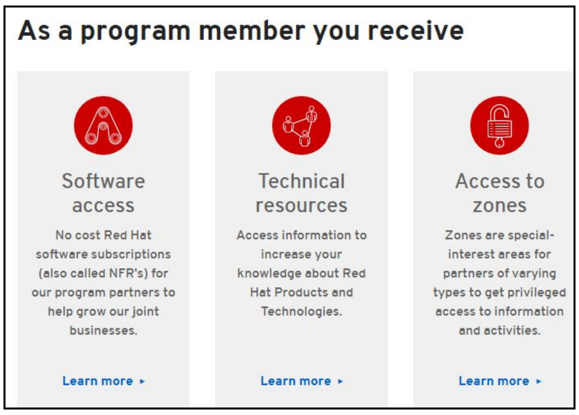
Suffix:

NOTE: For a User to access software and certification tools, you must check the Organization Administrator (Org Admin) box. Multiple users can be Organization Administrators.

Request Software Access

Log in to your RHC4TP account at connect.redhat.com.

Scroll down to the ***As a program member you receive section*** and click *LEARN MORE* under *Software access.*



As a program member you receive

Software access

No cost Red Hat software subscriptions (also called NFR's) for our program partners to help grow our joint businesses.

Learn more ▸

Technical resources

Access information to increase your knowledge about Red Hat Products and Technologies.

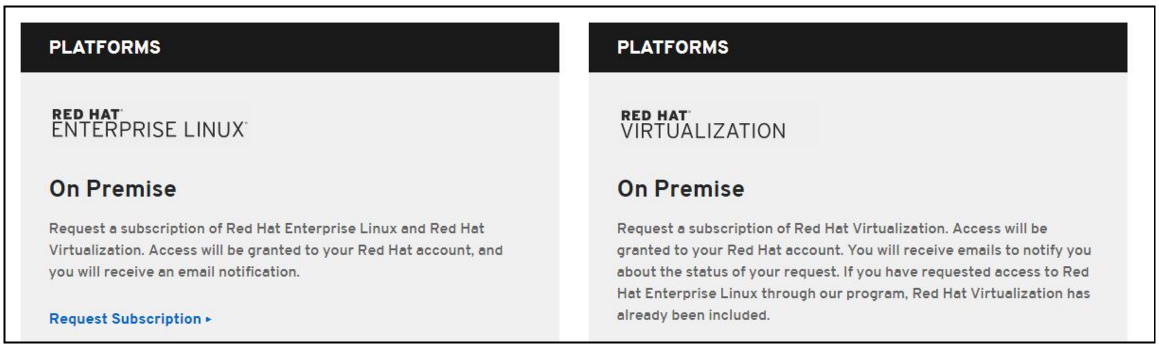
Learn more ▸

Access to zones

Zones are special-interest areas for partners of varying types to get privileged access to information and activities.

Learn more ▸

On the Red Hat Software Access Page, scroll down to *PLATFORMS* and click *REQUEST SUBSCRIPTION* under the software you need



PLATFORMS

RED HAT ENTERPRISE LINUX

On Premise

Request a subscription of Red Hat Enterprise Linux and Red Hat Virtualization. Access will be granted to your Red Hat account, and you will receive an email notification.

Request Subscription ▸

PLATFORMS

RED HAT VIRTUALIZATION

On Premise

Request a subscription of Red Hat Virtualization. Access will be granted to your Red Hat account. You will receive emails to notify you about the status of your request. If you have requested access to Red Hat Enterprise Linux through our program, Red Hat Virtualization has already been included.

You will receive an email once software access has been granted.

Access granted software entitlements

Go to access.redhat.com

Click *DOWNLOADS* under Quick links at the bottom of the page

Choose the product family

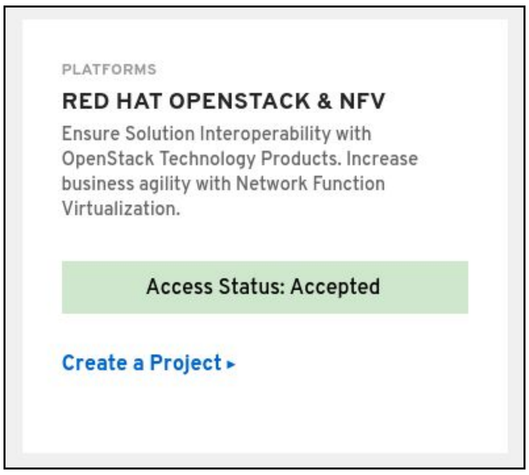
Then follow the instructions to download

Create a Certification Project

Log in to your RHC4TP account at connect.redhat.com.

Select *ZONES* at the top of the page.

Scroll down to the OpenStack & NFV Zone and create the Project under and click *CREATE A PROJECT.*



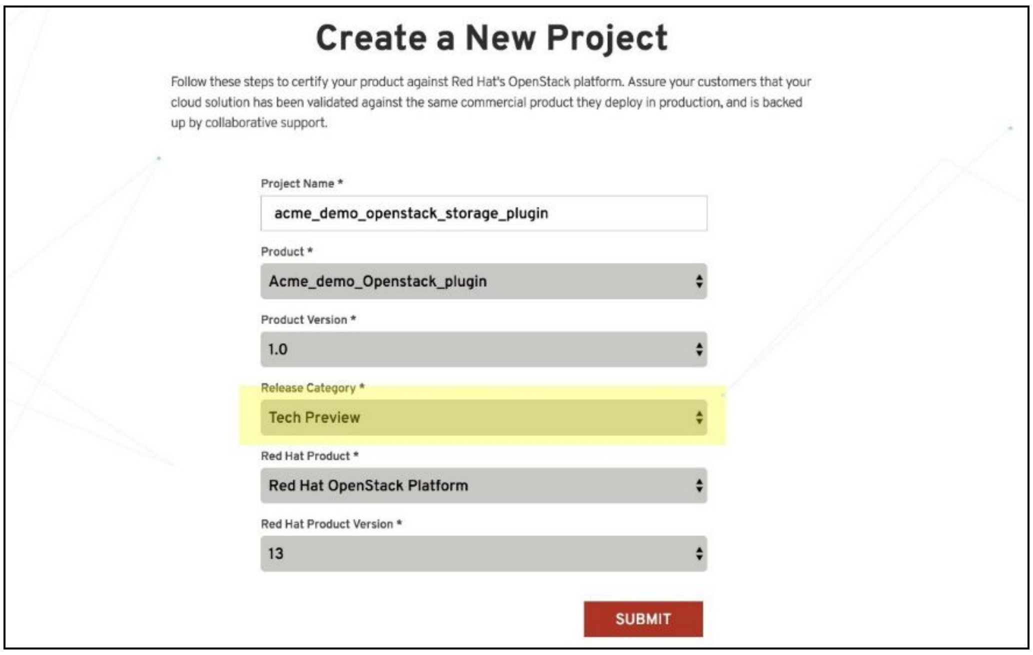
PLATFORMS

RED HAT OPENSTACK & NFV

Ensure Solution Interoperability with OpenStack Technology Products. Increase business agility with Network Function Virtualization.

Access Status: Accepted

Complete the required fields and click *SUBMIT*.



Create a New Project

Follow these steps to certify your product against Red Hat's OpenStack platform. Assure your customers that your cloud solution has been validated against the same commercial product they deploy in production, and is backed up by collaborative support.

Project Name *
acme_demo_openstack_storage_plugin

Product *
Acme_demo_Openstack_plugin

Product Version *
1.0

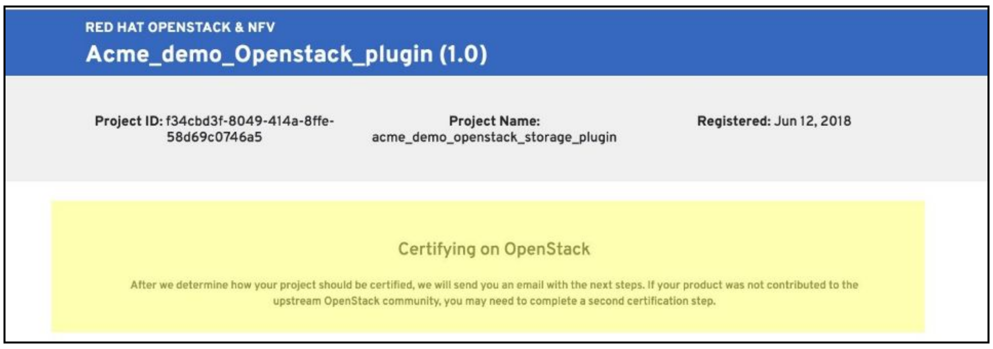
Release Category *
Tech Preview

Red Hat Product *
Red Hat OpenStack Platform

Red Hat Product Version *
13

Note: Select **Tech Preview** for the Release Category.
General Availability is **not** an option for OpenStack plugins due to the API testing that is completed using the rhcert portal .

After you have created the Project, you will presented with the page below.



RED HAT OPENSTACK & NFV

Acme_demo_Openstack_plugin (1.0)

Project ID: f34cbd3f-8049-414a-8ffe-58d69c0746a5

Project Name: acme_demo_openstack_storage_plugin

Registered: Jun 12, 2018

Certifying on OpenStack

After we determine how your project should be certified, we will send you an email with the next steps. If your product was not contributed to the upstream OpenStack community, you may need to complete a second certification step.

A member of the RH4TP will contact you with further questions to determine whether your project is **In Tree** or **Out of Tree**. If you are not contacted, please send an email to connect@redhat.com.

After the plugin status is confirmed and approved, you will be able to move on the the Certification Workflows.

In Tree vs Out of Tree

Projects can be contributed to the Red Hat Container platform following two separate processes: In Tree or Out of Tree. The descriptions below highlight the differences between both.

In Tree

In Tree plugins are included with the OpenStack upstream code base. In this case, Red Hat will build the plugin and will distribute it with every RHOSP 13 release. In Tree plugins also do not have to go through a container certification process, since Red Hat will verify that the plugin will work prior to release.

Out of Tree

Out of Tree plugins require an extra step called **Container Certification**. It is understood that partners that do not want their codebase to be distributed with RHOSP must take extra measure to ensure that their plugin adheres to our certification policy.

Another major difference is that out of tree plugins must be built by the partner, scanned for security (by RH), and must be continuously maintained for security updates. Red Hat Connect has a built-in scanner that will review your container prior to publishing. Once all checks pass, then the plugin can be published as tech preview.

Functional Certification

Both processes will still need to go through **functional certification** to ensure that the plugins are compatible with RHOSP prior to release. This process involves utilizing a self-hosted OpenStack environment and collaborating with RHOSP engineers by providing them with system logs.

Once the plugins are confirmed to work with the RHOSP API, the project can then be switched from “Tech Preview” to “Generally Available”.

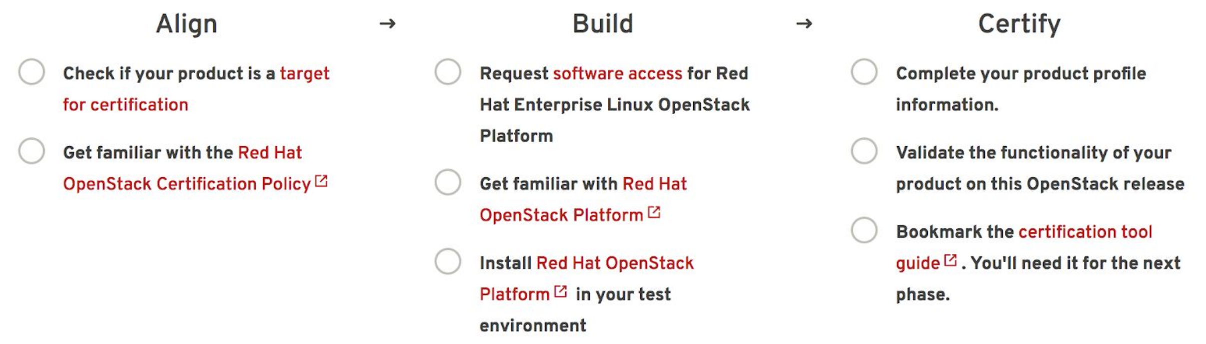
The full functional certification guide can be found here: https://access.redhat.com/documentation/en-us/red_hat_openstack_certification/1.0/html/red_hat_openstack_certification_workflow_guide/

In Tree = Plugin is included in the OpenStack upstream code base and the plugin image is built by Red Hat and distributed with RHOSP 13.

Out of Tree = Plugin image is **NOT** included of the OpenStack upstream code base and **NOT** distributed within RHOSP 13.

In Tree Certification Workflow

Once your project has been configured as In Tree (by Red Hat), you will be greeted with the ABC guide: Align, Build, Certify.



Align →

○ Check if your product is a target for certification

○ Get familiar with the Red Hat OpenStack Certification Policy

Build →

○ Request software access for Red Hat Enterprise Linux OpenStack Platform

○ Get familiar with Red Hat OpenStack Platform

○ Install Red Hat OpenStack Platform in your test environment

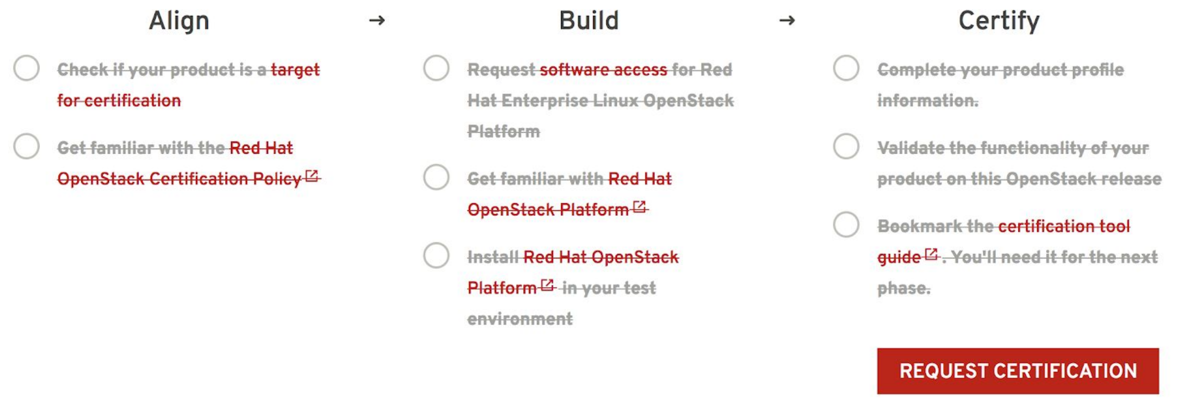
Certify

○ Complete your product profile information.

○ Validate the functionality of your product on this OpenStack release

○ Bookmark the certification tool guide. You'll need it for the next phase.

This guideline is simply a list of steps to begin your plugin integration with RHOSP. Note that the red text is a link to official Red Hat documentation and that each step is a different part of the process. Once you have read through all of the documentation, click on the black text so that the list item has a strikethrough (see image below). After all list items have been checked off, the “Request Certification” button will be clickable. Requesting certification will initiate the functional testing portion of the workflow and will change your project’s status to “Ready For Certification”.



Align →

○ ~~Check if your product is a target for certification~~

○ ~~Get familiar with the Red Hat OpenStack Certification Policy~~

Build →

○ ~~Request software access for Red Hat Enterprise Linux OpenStack Platform~~

○ ~~Get familiar with Red Hat OpenStack Platform~~

○ ~~Install Red Hat OpenStack Platform in your test environment~~

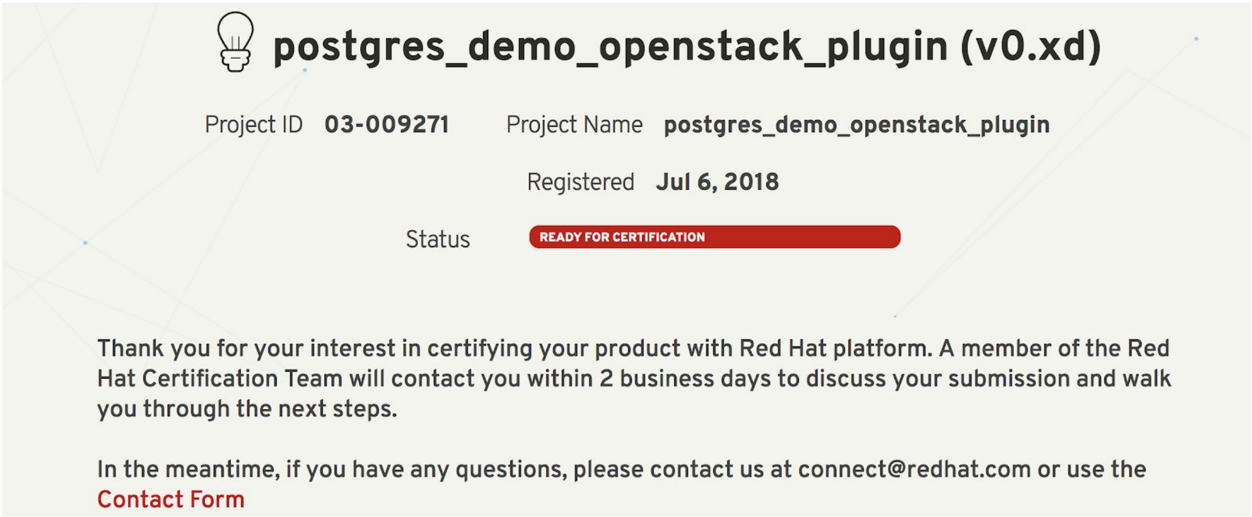
Certify

○ ~~Complete your product profile information.~~

○ ~~Validate the functionality of your product on this OpenStack release~~

○ ~~Bookmark the certification tool guide. You'll need it for the next phase.~~

Once you reach this page, you are now ready to start the final step, **functional certification**. Functional certification involves creating your own self-hosted OpenStack environment and testing your plugin using packages created for this specific test. System logs will need to be collected and sent to Red Hat engineering for review. A detailed guide of this step can be found here: https://access.redhat.com/documentation/en-us/red_hat_openstack_certification/1.0/html/red_hat_openstack_certification_workflow_guide/



postgres_demo_openstack_plugin (v0.xd)

Project ID **03-009271** Project Name **postgres_demo_openstack_plugin**

Registered **Jul 6, 2018**

Status READY FOR CERTIFICATION

Thank you for your interest in certifying your product with Red Hat platform. A member of the Red Hat Certification Team will contact you within 2 business days to discuss your submission and walk you through the next steps.

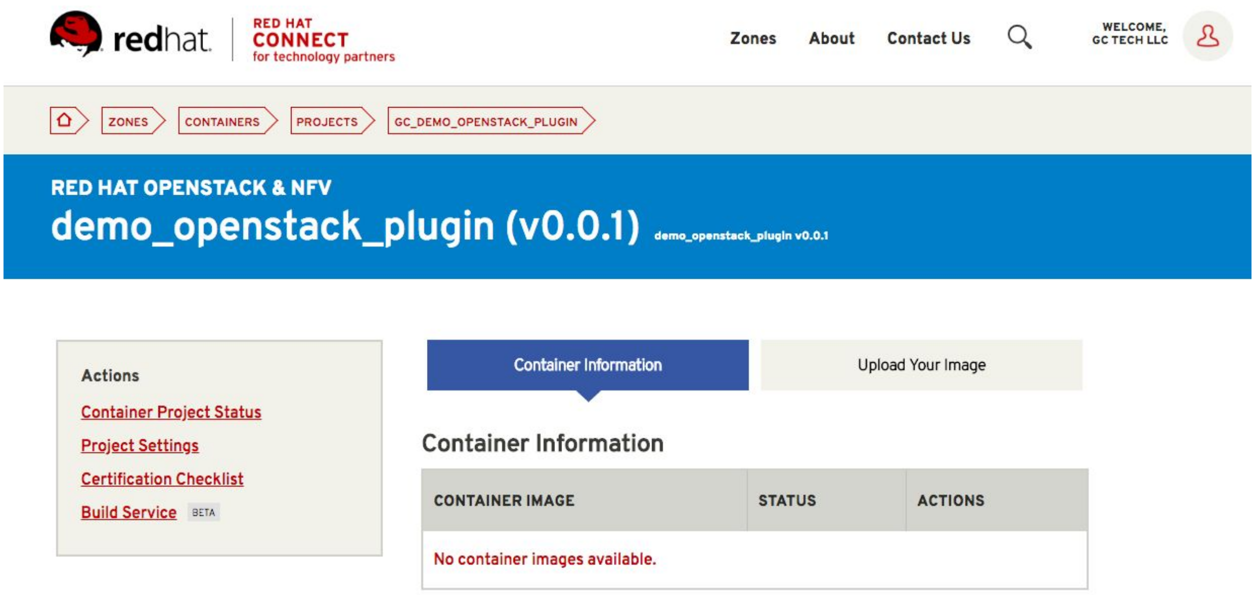
In the meantime, if you have any questions, please contact us at connect@redhat.com or use the Contact Form

Once RHOSP engineers have determined that your plugin can integrate with the RHOSP platform, it will then be included in the upstream and will be released in the next major RHOSP release.

Out of Tree Certification Workflow

If the partner has not contributed the plugin to the OpenStack upstream code base, the image will need to complete the following checklist and use the Red Hat Automated Build Service (ABS) to push and scan the image. Once container certification is completed, then functional testing will be the next step in releasing your container as Generally Available.

To get started, visit your company dashboard and select the project under the OpenStack & NFV Zone. Upon clicking on your project, you will be directed to your project detail page. The next steps will relate to the Container Certification Checklist.



RED HAT OPENSTACK & NFV

demo_openstack_plugin (v0.0.1) demo_openstack_plugin v0.0.1

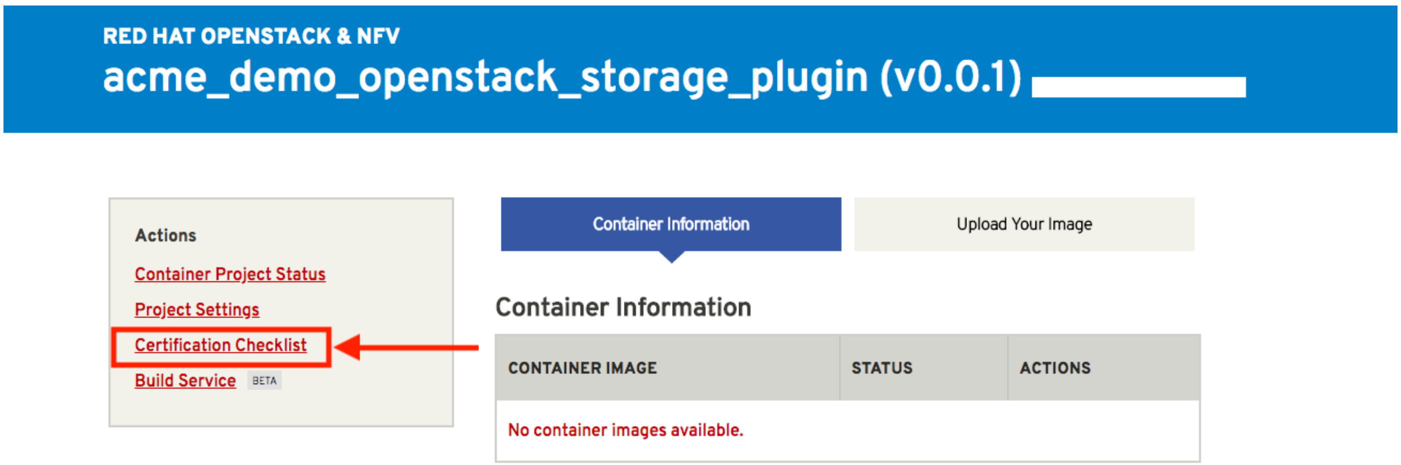
Container Information

CONTAINER IMAGE	STATUS	ACTIONS
No container images available.		

The Container Certification Checklist

Certified containers are applications that meet Red Hat's best practices for packaging, distribution, and maintenance. Certified containers imply a commitment from partners to maintain their images up to date and represent the highest level of trust and supportability for Red Hat customers container-capable platforms, including Red Hat OpenStack Platform.

To access the Certification Checklist, click on the option in the left hand box:



RED HAT OPENSTACK & NFV

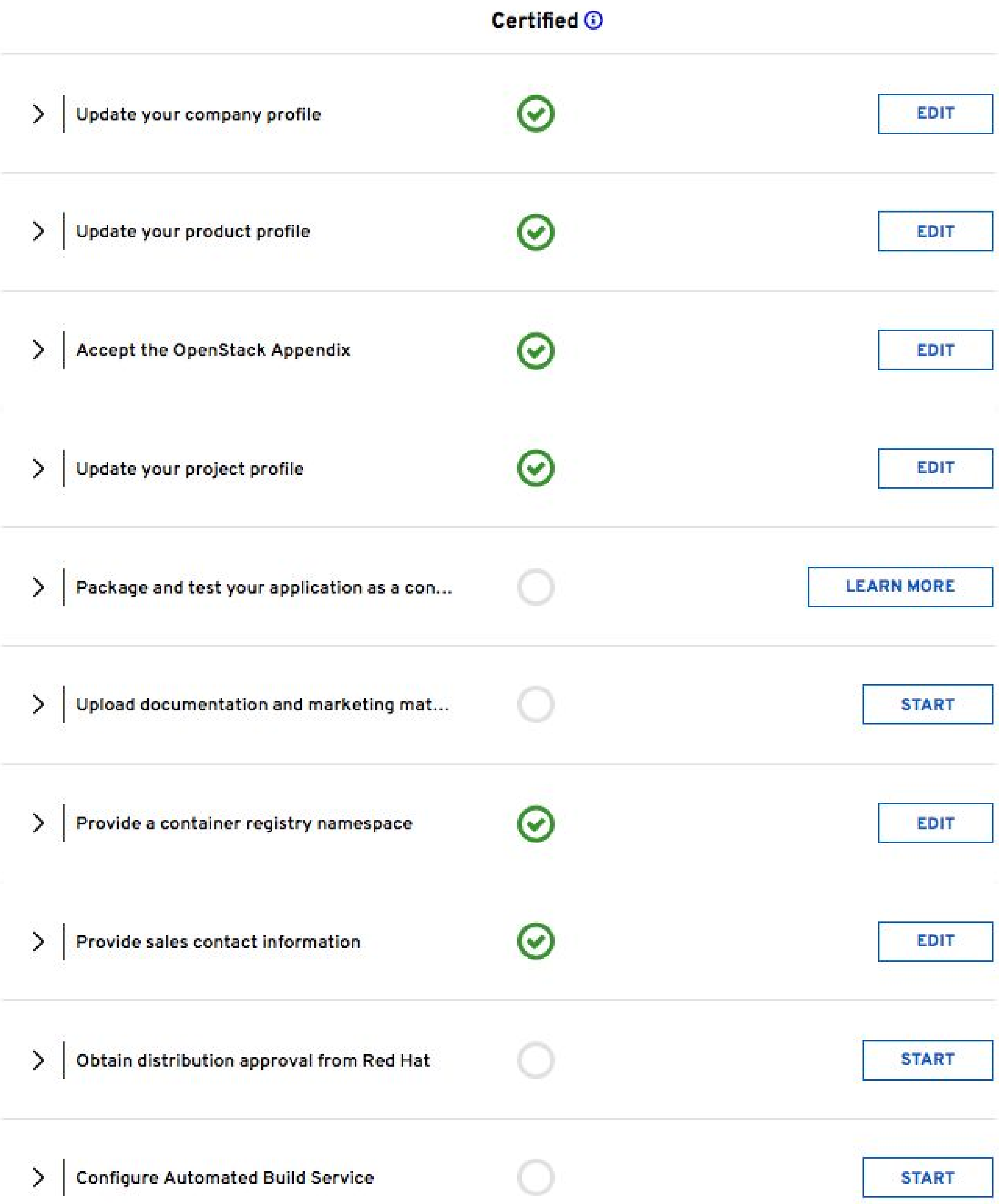
acme_demo_openstack_storage_plugin (v0.0.1)

Container Information

CONTAINER IMAGE	STATUS	ACTIONS
No container images available.		

The goal is to complete all sections of the certification checklist. If you need more information, you can click on the dropdown arrows and it will provide you with relevant links.

Example of a Container Checklist in progress:



	Certified ⓘ	
> Update your company profile	✓	EDIT
> Update your product profile	✓	EDIT
> Accept the OpenStack Appendix	✓	EDIT
> Update your project profile	✓	EDIT
> Package and test your application as a con...	○	LEARN MORE
> Upload documentation and marketing mat...	○	START
> Provide a container registry namespace	✓	EDIT
> Provide sales contact information	✓	EDIT
> Obtain distribution approval from Red Hat	○	START
> Configure Automated Build Service	○	START

Certification Checklist Section Descriptions

- *Update your company profile*
    - This page is to ensure that your company profile is up to date. Edit if necessary.
- *Update your product profile*
    - This page relates to the product's profile such as product type, description, repository URL, version, contact distribution list, etc.
- *Accept the OpenStack Appendix*
    - Site Agreement to the Container Terms.
- *Update project profile*
    - This section relates more to the image/container settings such as Auto Publish feature, registry namespace, release category, supported platforms.

Note: There is a minor bug on this page. In the "Supported Platforms" section at the bottom, you must select an option, even regardless of the zone your project is in (Containers/OpenStack). Select any any option will allow you to save other required fields on this page.

- *Package and test your application as a container*
    - Follow the instructions on this page to configure the build service. The build service will be dependent on the complete of the previous steps.
- *Upload documentation and marketing materials*
    - This will bring you to the product page. Scroll to the bottom and click on ***Add new Collateral*** to upload your product information.

Note: A minimum of 3 materials are required, with 1 being a mandatory “document” type. This is where you add your product information to your product page.

- *Provide a container registry namespace*
    - This is the same as the project page profile page.
- Provide sales contact information
    - Again, this information is the same as the company profile.
- Obtain distribution approval from Red Hat
    - Red Hat will take care of this step.
- Configure Automated Build Service
    - The build service is where Red Hat will automatically build your container/image by utilizing the Dockerfile provided in your repository. The advantage of setting up the automated build service is that your image will update whenever the underlying base image/OS is updated, to ensure up-to-date security. Part of the agreement of using Red Hat’s services requires that your container meets a high security standard. See section “Build Service” to get started with this.

Preparing the Image For Scanning

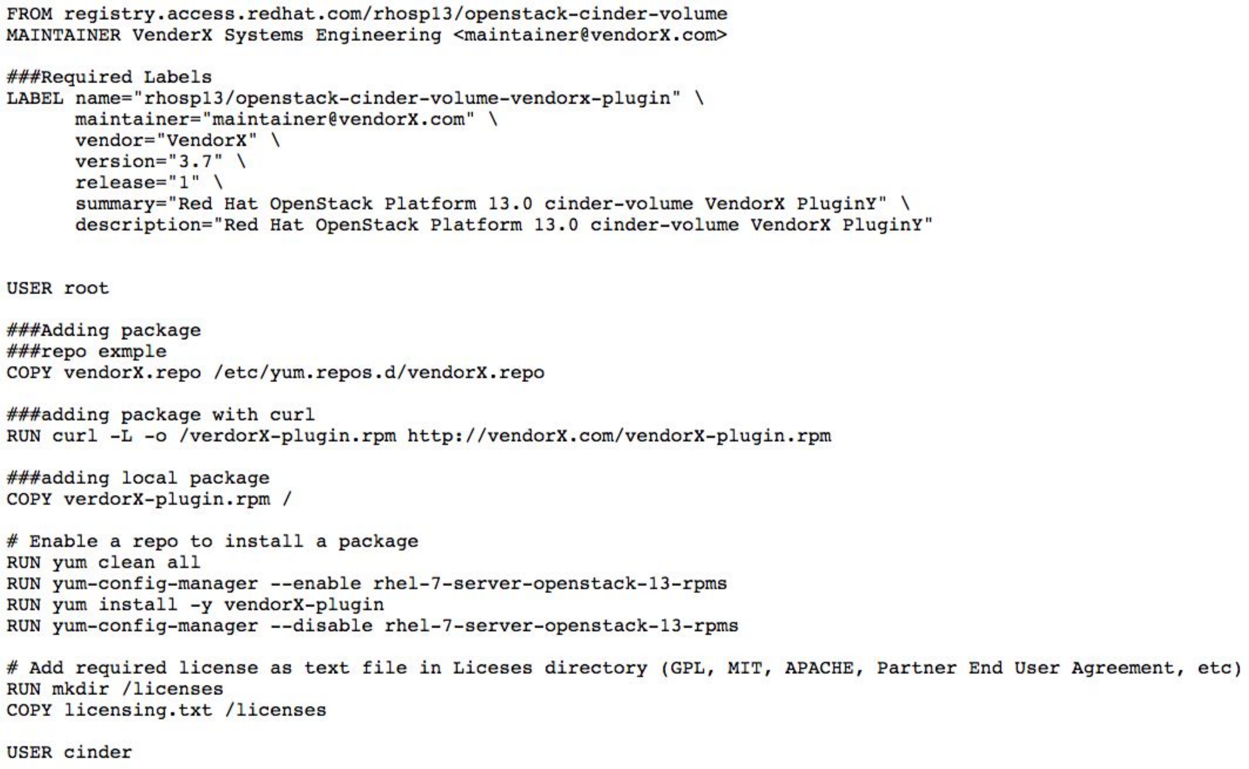
Red Hat **requires** specific labels and metadata in your Dockerfile for the image to pass the scan. In addition to labels, the scanner also requires licenses and it must be added to the Dockerfile.

Please see the OpenStack & NFV neutron and cinder examples in this link for guidance: https://github.com/RHC4TP/starter

Dockerfile Requirements

1. Base image **must** be Red Hat. Any images using Ubuntu, Debian, CentOS, etc as a base will **not** pass the scanner.
2. You must configure the required labels (name, maintainer, vendor, version, release, summary)
3. Software license(s) must be included (txt file only) within the image and must be added in the root of the project.
4. You must configure a user other than root.

Below is a snippet of a Dockerfile which includes the aforementioned requirements:



```
FROM registry.access.redhat.com/rhosp13/openstack-cinder-volume
MAINTAINER VenderX Systems Engineering <maintainer@vendorX.com>

###Required Labels
LABEL name="rhosp13/openstack-cinder-volume-vendorx-plugin" \
      maintainer="maintainer@vendorX.com" \
      vendor="VendorX" \
      version="3.7" \
      release="1" \
      summary="Red Hat OpenStack Platform 13.0 cinder-volume VendorX PluginY" \
      description="Red Hat OpenStack Platform 13.0 cinder-volume VendorX PluginY"


USER root

###Adding package
###repo exmple
COPY vendorX.repo /etc/yum.repos.d/vendorX.repo

###adding package with curl
RUN curl -L -o /verdorX-plugin.rpm http://vendorX.com/vendorX-plugin.rpm

###adding local package
COPY verdorX-plugin.rpm /

# Enable a repo to install a package
RUN yum clean all
RUN yum-config-manager --enable rhel-7-server-openstack-13-rpms
RUN yum install -y vendorX-plugin
RUN yum-config-manager --disable rhel-7-server-openstack-13-rpms

# Add required license as text file in Liceses directory (GPL, MIT, APACHE, Partner End User Agreement, etc)
RUN mkdir /licenses
COPY licensing.txt /licenses

USER cinder
```

The Build Service

What does it do?

This service automates the rebuilding of your image whenever an updated Red Hat package is available. It also scans your image (after a successful build) for any security vulnerabilities that may be present prior to publishing your image to the Container Catalog.

How does it work?

The build service clones your Github/Gitlab repository onto a build server, and uses the Dockerfile to build your image.

Why is this recommended?

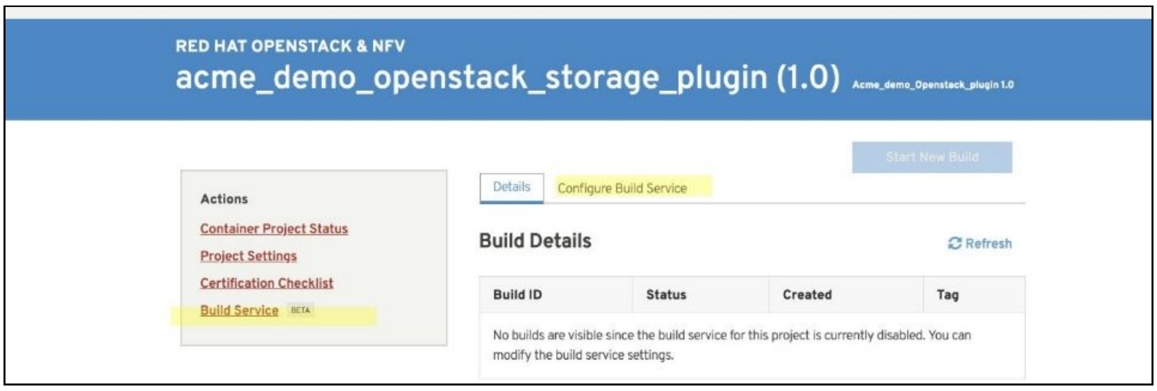
It is a requirement from Red Hat to properly maintain your image by keeping up to date with the latest security updates. By not using the automated build service, you are opting into manually maintaining and rebuilding your image every time an update is released.

Red Hat keeps track of your image by giving it a grade. If your image falls too far behind on security updates, your image grade will drop and will be flagged for removal from the Container Catalog.

Configuration

Configuration is very easy and straightforward. Follow the steps below:

In the left hand box, click on Build Service:



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acme_demo_openstack_storage_plugin (1.0) Acme_demo_Openstack_plugin 1.0

Actions

- Container Project Status
- Project Settings
- Certification Checklist
- Build Service BETA

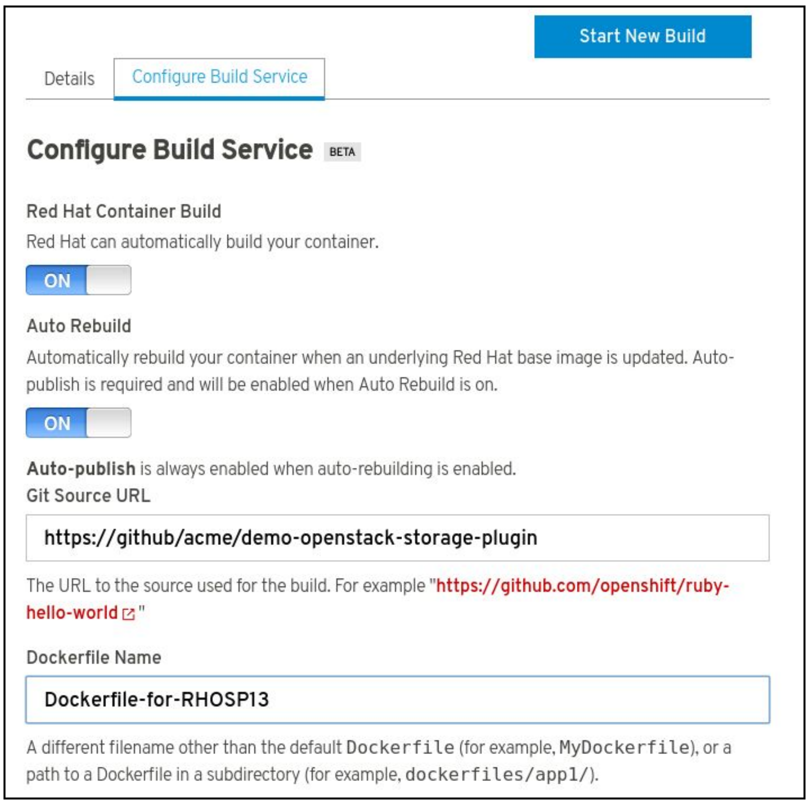
Build Details

Build ID	Status	Created	Tag

No builds are visible since the build service for this project is currently disabled. You can modify the build service settings.

Click on the Configure Automated Build Service tab and fill in the git repo and the Dockerfile name if it has a name other than “Dockerfile”.

If your repository is public, then all that is needed is the git source URL (HTTPS link). If your repository is *private*, then you must configure the build service with the SSH link and a private ssh key. The git repository needs the public ssh key associated with the private key in order to successfully clone. It is recommended to create a new public and private ssh key just for the project. Never use your own personal private key.



Configure Build Service BETA

Red Hat Container Build

Red Hat can automatically build your container.

ON

Auto Rebuild

Automatically rebuild your container when an underlying Red Hat base image is updated. Auto-publish is required and will be enabled when Auto Rebuild is on.

ON

Auto-publish is always enabled when auto-rebuilding is enabled.

Git Source URL

https://github/acme/demo-openstack-storage-plugin

The URL to the source used for the build. For example "**https://github.com/openshift/ruby-hello-world**"

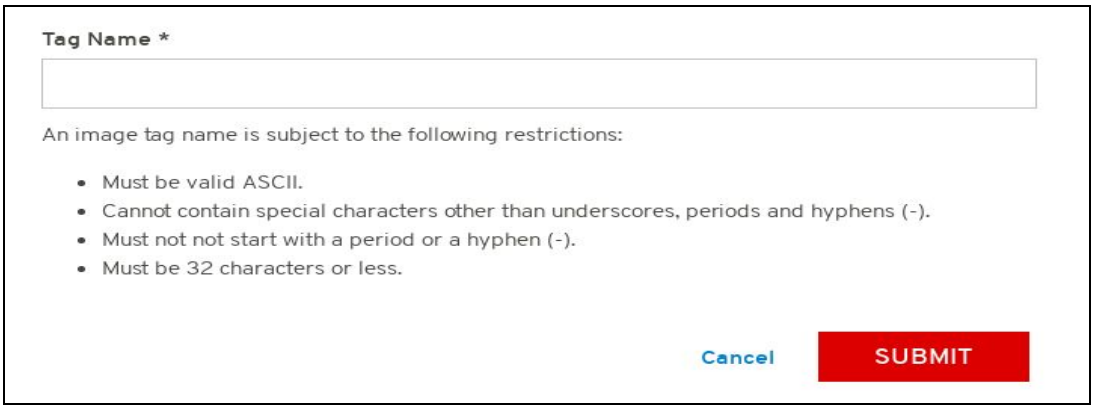
Dockerfile Name

Dockerfile-for-RHOSP13

A different filename other than the default `Dockerfile` (for example, `MyDockerfile`), or a path to a Dockerfile in a subdirectory (for example, `dockerfiles/app1/`).

Click “Start New Build” button at the top of the page.

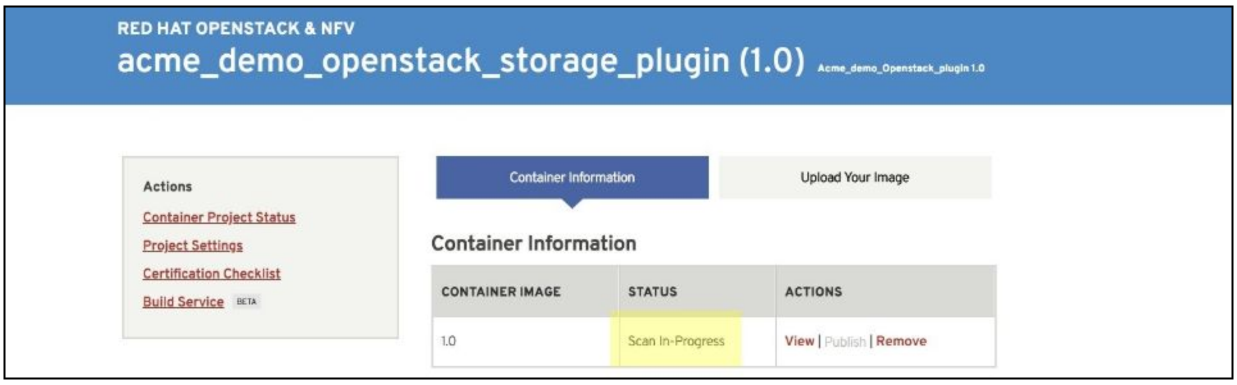
Enter a tag number (the version number of the plugin) and click *SUBMIT* to begin the build and scan process.



Tag Name *

An image tag name is subject to the following restrictions:

- Must be valid ASCII.
- Cannot contain special characters other than underscores, periods and hyphens (-).
- Must not not start with a period or a hyphen (-).
- Must be 32 characters or less.



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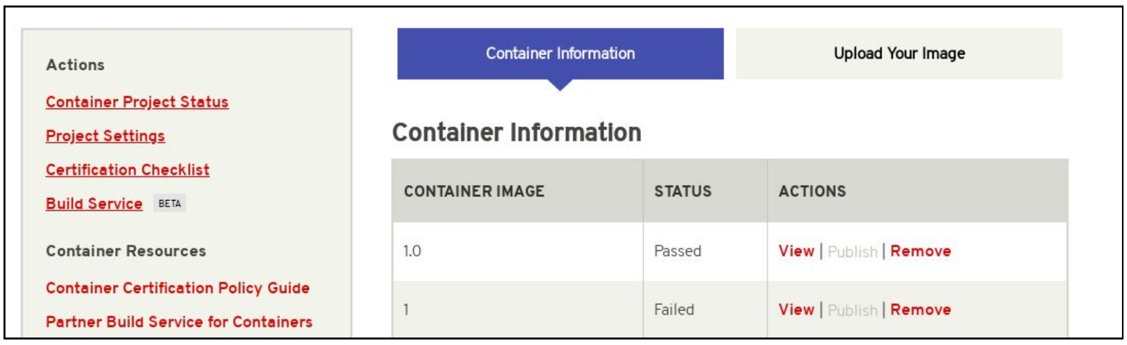
acme_demo_openstack_storage_plugin (1.0) Acme_demo_Openstack_plugin 1.0

Container Information

CONTAINER IMAGE	STATUS	ACTIONS
1.0	Scan In-Progress	View | Publish | Remove

NOTE: The Build Service must first be completed before it can begin the scanning process for certification. If your Build Service fails or does not complete, make sure the details you entered under the Configure Build Service tab is correct and confirm that your Dockerfile conforms to the examples provided in this link.

Once the image has completed the scan in Red Hat Connect repository, the image will show the results of the scan. Scans normally take about 10-15 minutes to complete.



Container Information

CONTAINER IMAGE	STATUS	ACTIONS
1.0	Passed	View | Publish | Remove
1	Failed	View | Publish | Remove

The "View" button will expand on the scan results. The "Publish" button will publish the image to the Red Hat Container Catalog. It will change to "Unpublish" once and image has been published. The "Remove" button allows you to remove an image that you do not want to use or need anymore.

Note: If you would like to manually push your images instead of using the Automated build Service, please see section ***Manually Upload Your Image***

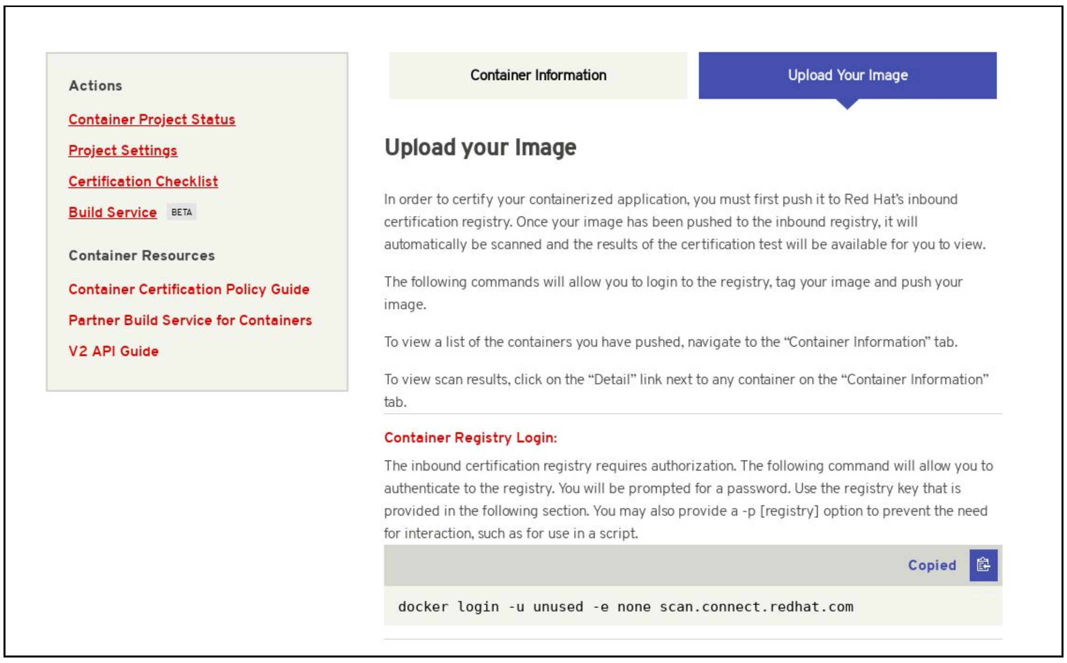
Manually Upload Your Image

This information can be located in the ***Upload Your Image*** tab on the Projects page.

Cut and paste the following line to your terminal.

```
# docker login -u unused -e none scan.connect.redhat.com
```

When prompted for the password copy and paste the ***Registry Key*** located on the ***Upload Your Image*** tab in the project. This Registry Key is unique per project, please make sure you are using the correct password for the project you are working on.



Upload your Image

In order to certify your containerized application, you must first push it to Red Hat's inbound certification registry. Once your image has been pushed to the inbound registry, it will automatically be scanned and the results of the certification test will be available for you to view.

The following commands will allow you to login to the registry, tag your image and push your image.

To view a list of the containers you have pushed, navigate to the "Container Information" tab.

To view scan results, click on the "Detail" link next to any container on the "Container Information" tab.

Container Registry Login:

The inbound certification registry requires authorization. The following command will allow you to authenticate to the registry. You will be prompted for a password. Use the registry key that is provided in the following section. You may also provide a -p [registry] option to prevent the need for interaction, such as for use in a script.

```
docker login -u unused -e none scan.connect.redhat.com
```

Downloading Your Unpublished Container

It is possible to download your unpublished container to test it on a local environment. To do so, visit the ***Upload Your Image*** tab and copy the last command for ***Push Your Container***. Change the word "push" to "pull" and replace the data in the brackets with the data appropriate to your project. Use either one of the command formats below to pull your image from the registry.

If your image was built using the build service:

format: `# docker pull scan.connect.redhat.com/[pid]/partner-build-service:[image-tag]`

example: `# docker pull scan.connect.redhat.com/p78693833236cdf211b0b7767fec4f6fe2a25b4e51/partner-build-service:1.2.0`

If your image was built locally and pushed manually:

format: `# docker pull scan.connect.redhat.com/[pid]/[image-name]:[image-tag]`

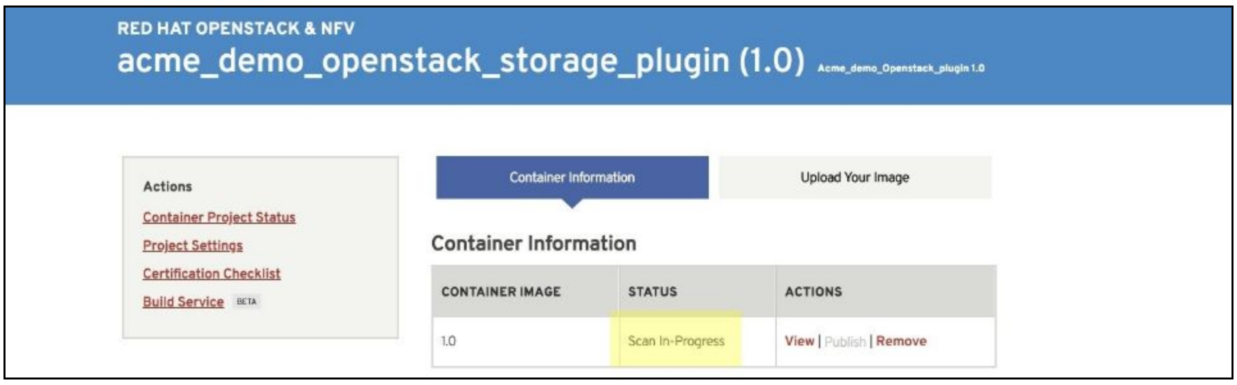
example: `# docker pull scan.connect.redhat.com/p78693833236cdf211b0b7767fec4f6fe2a25b4e51/my-awesome-plugin:1.2.0`

Common Error: `Error response from daemon: unauthorized: authentication required`

If your CLI complains of authorization being required after logging into the registry and performing a `docker pull` command, try these steps:

1. Log back into the registry: `docker login -u unused -e none scan.connect.redhat.com`
2. Copy the registry key and paste it on your command prompt as the password when prompted.
3. If you still get this error, after `docker pull` make sure that you physically type the commands. The only thing that should be copied and pasted is the registry key. Copying and pasting commands from PDF files or other programs or between VMs/hosts has been known to add special characters or trailing spaces that may alter your commands.

After the image has completed being uploaded, the image will display “Scan In-Progress” in the “Status” column.



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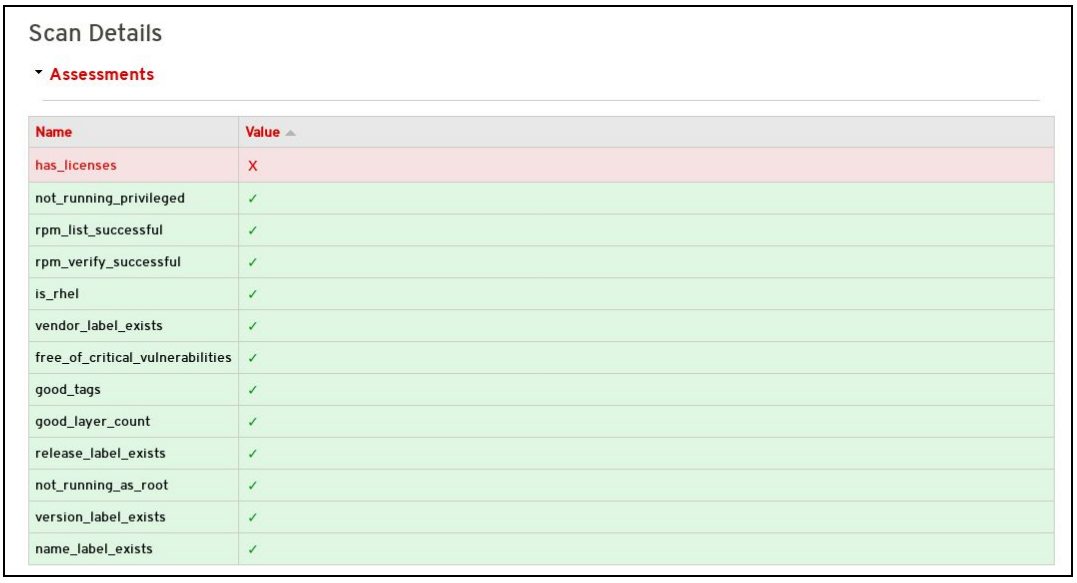
acme_demo_openstack_storage_plugin (1.0) Acme_demo_Openstack_plugin 1.0

Container Information

CONTAINER IMAGE	STATUS	ACTIONS
1.0	Scan In-Progress	View | Publish | Remove

Image Scan Results

If the image returns a “Failed” scan status, the results will automatically be displayed. Click on the name of the failed item (in this example, “has_licenses”) for reference to the policy guide.



Scan Details

Assessments

Name	Value
has_licenses	X
not_running_privileged	✓
rpm_list_successful	✓
rpm_verify_successful	✓
is_rhel	✓
vendor_label_exists	✓
free_of_critical_vulnerabilities	✓
good_tags	✓
good_layer_count	✓
release_label_exists	✓
not_running_as_root	✓
version_label_exists	✓
name_label_exists	✓

***NOTE:** If you receive an “Access Denied” link when accessing the Policy Guide, please reach out to connect@redhat.com

Export Compliance Questionnaire

Red Hat Export Questionnaire and Resource Links

This section references a set of questions provided by the Red Hat legal team for evaluation of export compliance by third party software vendors.
The resource links and questions should be reviewed and answered by a legal representative of the partner.
Completion and returning this document does not guarantee export compliance approval, but begins the evaluation process by Red Hat.
Depending on the answers provided, a set of follow-up questions may be necessary.
In the event that you have insufficient information to complete the questionnaire, some additional resources are provided in Part 2 below.

The evaluation process is outlined below:

Step 1: Red Hat provides questionnaire to partner to complete

Step 2: Partner engages their legal team to review and respond to questionnaire

Step 3: Partner returns completed questionnaire to Red Hat

Step 4: Within approximately 5 business days, Red Hat legal evaluates responses and

a. Approves partner
b. Defers decision
c. Requests more information
d. Declines partner

Part I: Red Hat Questionnaire
Please access and complete this export questionnaire.

> *At this time, Red Hat is NOT able to accept applications that are authorized for export as encryption items under License Exception ENC §740.17(b)(2) and/or License Exception ENC §740.17(a) of the U.S. Export Administration Regulations.*

Part II: Resources
In the event that your company has not previously gone through the process of obtaining an export classification, or if you have not gone through this process for the product that you intend to publish in the Red Hat Container Catalog, the U.S. Department of Commerce's Bureau of Industry and Security provides these resources.
Unfortunately Red Hat cannot provide any guidance or help with our partners' export control compliance.

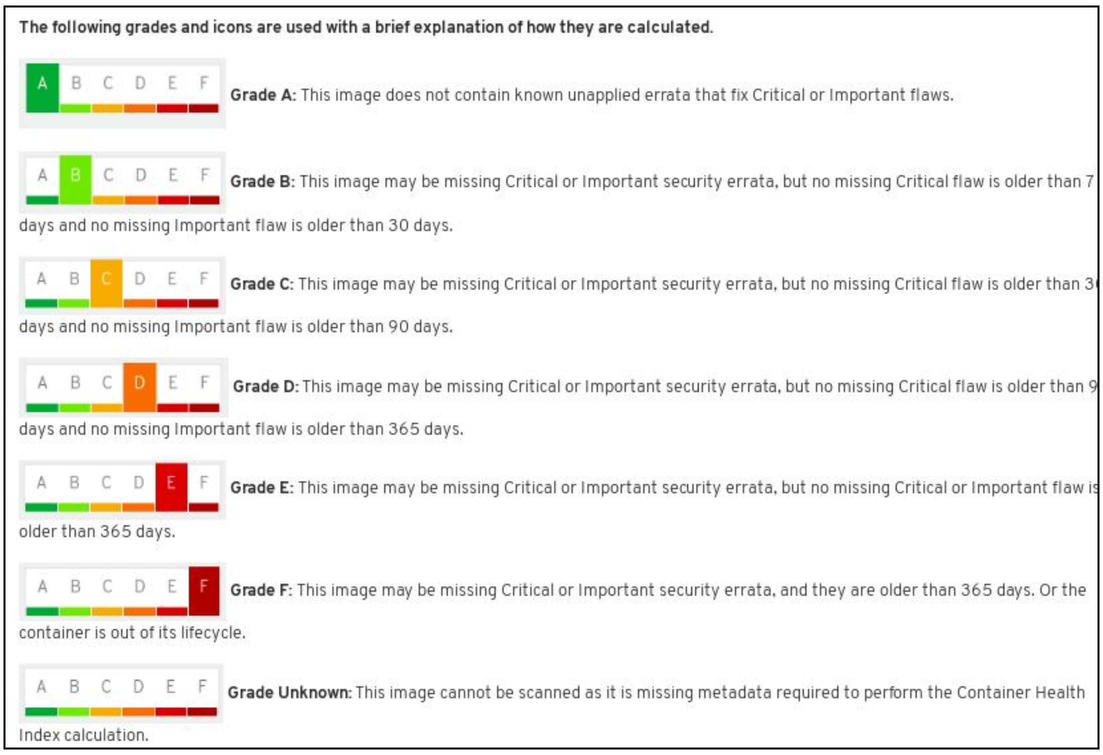
EAR/Encryption Overview	https://bis.doc.gov/index.php/1-encryption-items-not-subject-to-the-ear/15-policy-guidance/encryption	Guidance for determining whether your item is subject to the EAR.
Encryption items not subject to the EAR	https://bis.doc.gov/index.php/1-encryption-items-not-subject-to-the-ear	
Flowchart 1	https://bis.doc.gov/index.php/documents/new-encryption/1654-flowchart1/file	Item designed to use encryption NOT controlled under Category 5, Part 2
Flowchart 2	https://bis.doc.gov/index.php/documents/new-encryption/1655-flowchart-2-1/fil	Item classified under an ECCN in Category 5, Part

	e	2
License Exception ENC §740.17/ Mass Market Chart	https://bis.doc.gov/index.php/documents/new-encryption/1651-740-17-enc-table/file	
Chambers & Global - US Export Control Lawyers	http://www.chambersandpartners.com/12788/525/editorial/5/1	
Red Hat Export Control Product Matrix (for example purposes)	https://www.redhat.com/en/about/export-control-product-matrix	

Maintaining Certified Images

Image Maintenance Requirements

As software package vulnerabilities are discovered it is important to rebuild container images to keep them up-to-date. Without automation this process quickly becomes onerous and reflects poorly on the catalog listing. Organizations frequently run vulnerable software but few want to download vulnerable software. It is a requirement of Red Hat Connect Partner Program that the partner maintain the image certification. Red Hat publishes a "Container Health Index" (or CHI) as described here to inform partners about those situations where an image might need to be updated.



The following grades and icons are used with a brief explanation of how they are calculated.

Grade A: This image does not contain known unapplied errata that fix Critical or Important flaws.

Grade B: This image may be missing Critical or Important security errata, but no missing Critical flaw is older than 7 days and no missing Important flaw is older than 30 days.

Grade C: This image may be missing Critical or Important security errata, but no missing Critical flaw is older than 3 days and no missing Important flaw is older than 90 days.

Grade D: This image may be missing Critical or Important security errata, but no missing Critical flaw is older than 9 days and no missing Important flaw is older than 365 days.

Grade E: This image may be missing Critical or Important security errata, but no missing Critical or Important flaw is older than 365 days.

Grade F: This image may be missing Critical or Important security errata, and they are older than 365 days. Or the container is out of its lifecycle.

Grade Unknown: This image cannot be scanned as it is missing metadata required to perform the Container Health Index calculation.

Reference: https://access.redhat.com/articles/2803031

If a container image falls below an "A" grade, a periodic email from connect@redhat.com will be sent out to the partner contact list.

Top FAQs

1. **Who can upload images through the Portal?**

   A. The administrator account created for your organization may upload images. However, this account may grant permissions to other user accounts so that those accounts may also upload images.

2. **Can I change the Product Version after I created a Project?**

   A. No you cannot; therefore make sure you set it up correctly before starting any project with that product version. Keep in mind that the product version should be considered as the name of the image, the version can be specified later on when you Tag your image during the project.

3. **Can a container be built on another version of Linux other than Red Hat?**

   A. No, the Red Hat certification is a validation that the container, which is a combination of application software and Linux, is made of genuine Red Hat parts. Currently, Red Hat has just a little over one million paying customers today. Our customers do not use other versions of Linux and pay us for the services and support we provide to them. Therefore, your container needs to be built on a version of Red Hat Linux.

4. **Will the catalog support an ISO or virtual machine image as the container image?**

   A. No, this certification process is specifically for containers. Therefore, your image needs to be in Dockerfile format. You can find an example provided by Red Hat Engineering: Dockerfile Examples

5. **What path should my licenses be on?**

   A. Should be on / (the root or home directory of where the application resides). They must be text files, not PDF. You can find an example provided by RH Engineer:Dockerfile Example

6. **How do I change the namespace and repository name of my project?**

   A. First, unpublish all containers. Then change the namespace/repo in the project settings. Finally, re-publish your containers.

7. **How do I download my unpublished container?**

   A. First log into the registry (scan.connect.redhat.com) using the appropriate registry key as the password for the project. Then use this docker pull command if you have used the build service (#docker pull scan.connect.redhat.com/[pid]/partner-build-service:[image-tag]), otherwise, use (#docker pull scan.connect.redhat.com/[pid]/[image-name]:[image-tag]). Look at the ***Downloading Your Unpublished Container*** section above for more information.

8. **I pushed my image using a script but I do not see my image on the project page. Why is my project missing?**

   A. Make sure you pushed your image to the correct endpoint. The **correct** endpoint scan.connect.redhat.com. If you push your image to registry.rhc4tp.openshift.com, your image will not show up on the project page.

Online Resources

OpenStack Partner Integration	https://access.redhat.com/documentation/en-us/red_hat_openstack_platform/13/html/partner_integration/index
OpenStack Documentation	https://docs.openshift.com/container-platform/
Red Hat Atomic Recommended Practices for Container Development	https://access.redhat.com/articles/1483053
Continuous integration Examples	https://rhsyseng.github.io/containerzone-pipeline-library/#_example_jenkins_pipeline_using_docker
Examples of scan ready Dockerfiles	https://github.com/RHC4TP/starter.git
Docker tagging	https://docs.docker.com/engine/reference/commandline/tag/

Setting up a test RHEL system for building OpenStack images:
https://access.redhat.com/articles/1127153