Red Hat Container Catalog

Consuming Container Images from Red Hat and its Ecosystem

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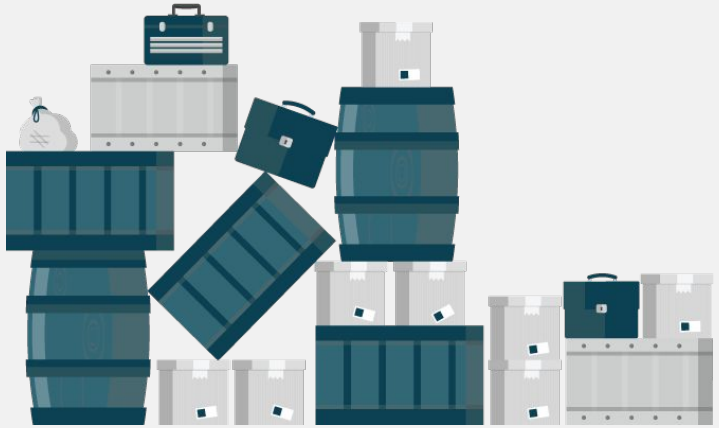
Product Owner Container Catalog
May 2nd 2017

redhat.

The Value & New Challenges

It’s quick and easy to pull a Linux container image from a public registry and get started.

In fact, too easy. There can be an explosion of different distributions, architectures, performance and security characteristics in different images.



redhat.

Red Hat Registry Stats

- 227 repositories
- 2,169 images
- 1+ TB storage

Red Hat Security Statistics 2016

- 97 critical RHSA
- 286 important RHSA
- 100% fixed in <1d *

Red Hat Customer Portal Stats 2016

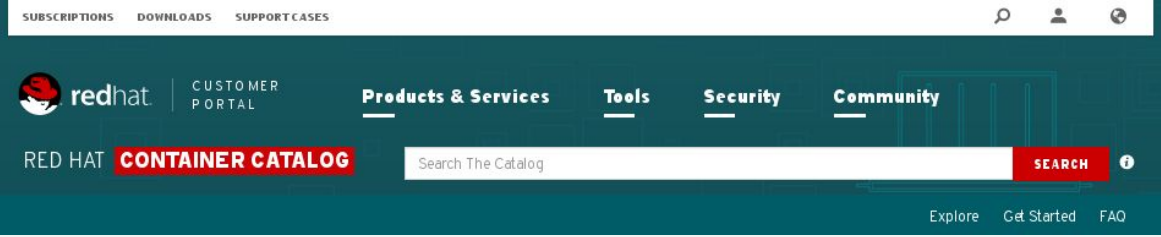
- 13,100,00 visitors
- 2,400,000 searches
- 108,300,00 views

- Cross-team effort of 10 teams across 4 organizations
- Design driven approach focusing on end customer user experience

RED HAT®
CONTAINER CATALOG

- Container Health Index
- Extensive Image Metadata
- Image Documentation
- Image Advisories

* 100% of critical security flaws in RHEL have been fixed in less than one day: https://access.redhat.com/blogs/766093/posts/2957221



Vision

Our vision is to help developers, architects, and IT operations realize the full potential of containers by transforming the way container-based applications are built, delivered, and consumed

1 Explore & Search

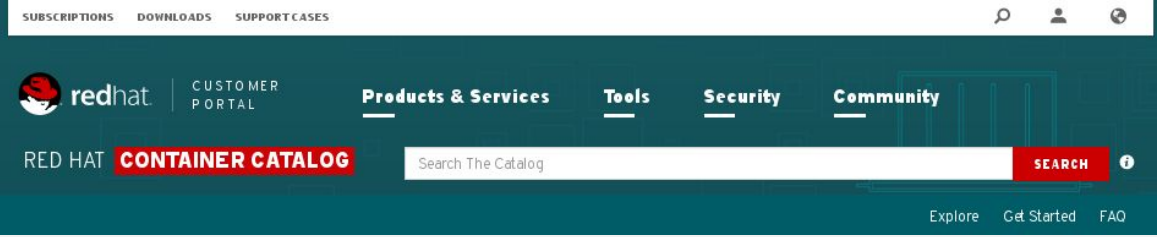
2 Evaluate & Select

3 Consume & Distribute

4 Use & Maintain

Mission

Our mission is to provide customers and partners with the best experience when delivering and consuming container-based applications. This includes the right information and guidance to make intelligent decisions about which container images to consume



Joe

Architect

I want to explore what's inside the Red Hat Container Catalog

I want to search for a product and see all images belonging to it

1 Explore & Search

2 Evaluate & Select

3 Consume & Distribute

4 Use & Maintain

I'm searching for a database container image

I'm searching for Red Hat Enterprise Linux base image

Jane

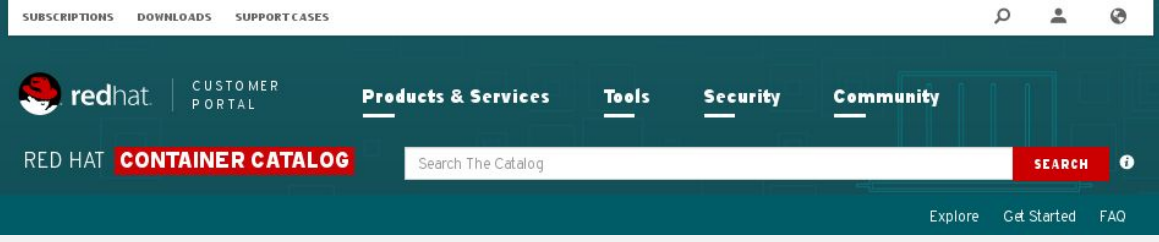
Developer

use our explore page to browse most relevant products and image categories

popular Red Hat and Ecosystem products

app categories such as database, programming language, logging

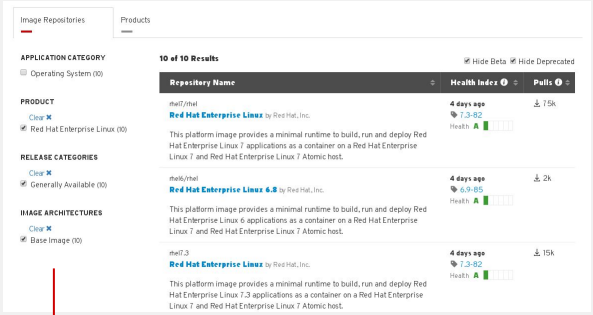
Base, Builder and Application Images



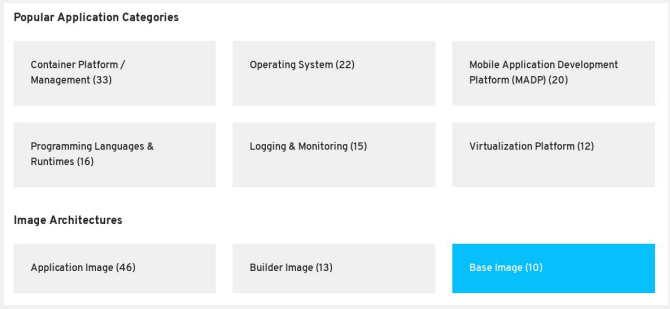
Jane

Developer

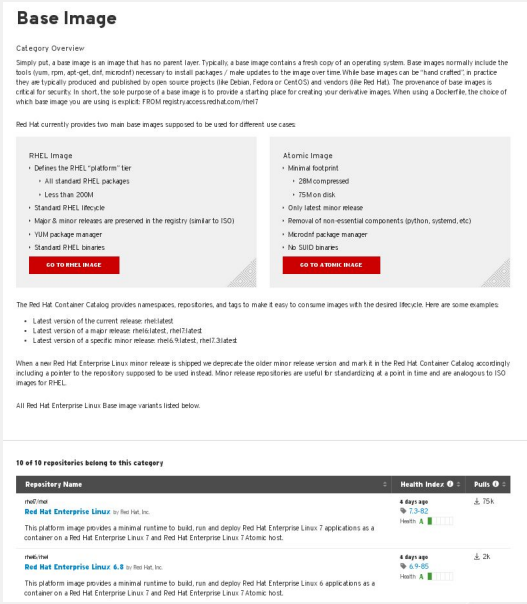
I'm looking for a base image, what are my options?



use the Base Images
filter on search page



or use Base Images
tile on explore page



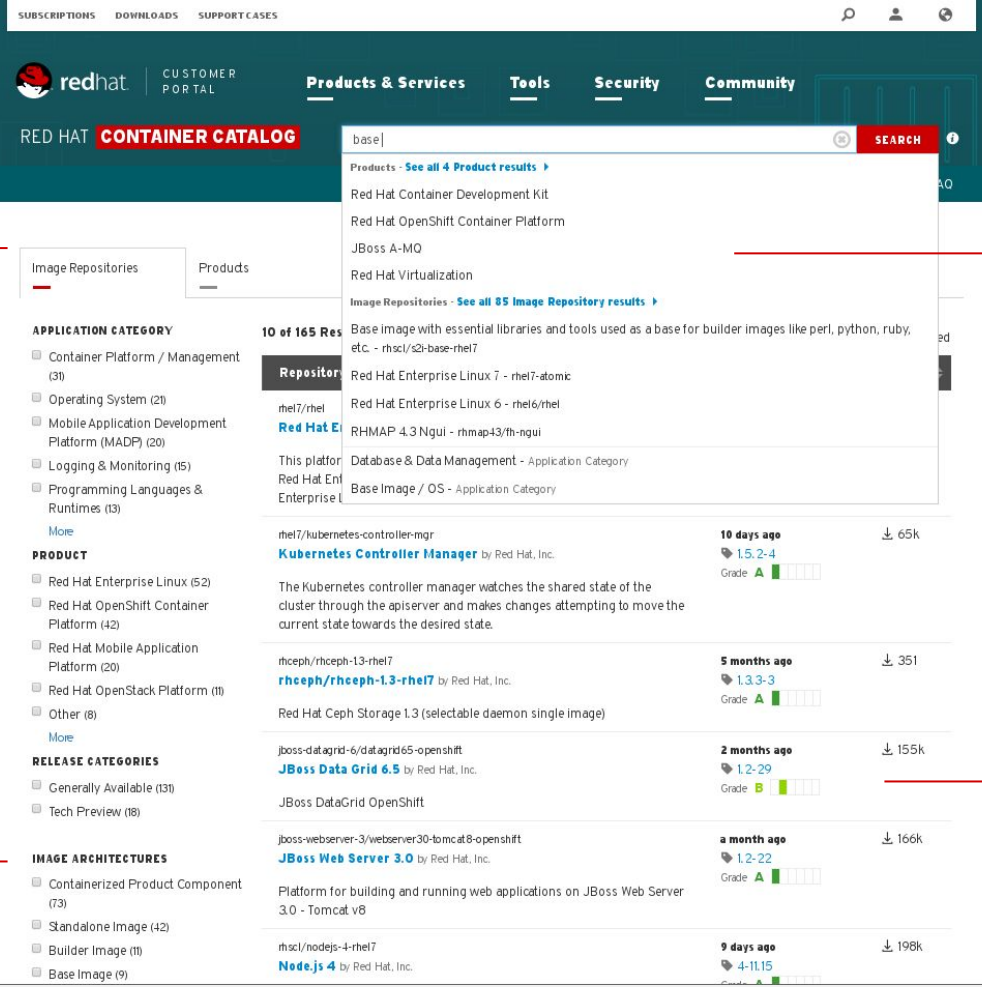
to find our Red Hat base images

redhat.

You can search for:

- Images / Repos
- Products
- Image ID
- Advisory ID
- Categories
- Keywords
- etc.

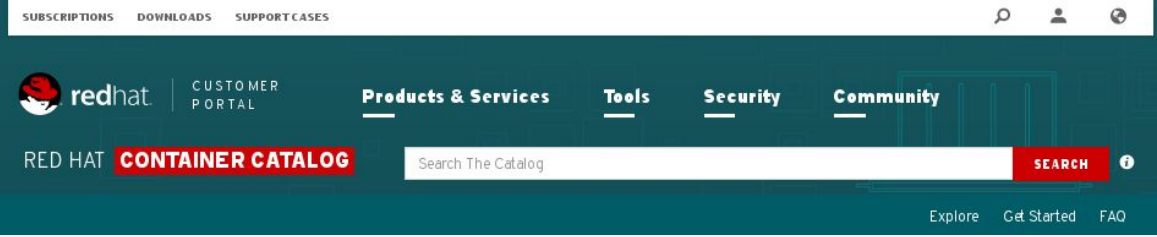
Filter facets for multiple characteristics



Type-ahead contains products, repositories and app categories

Search results with key data

redhat.



Joe

Architect

I want to see the key characteristics of an image.

Is there documentation available around an image?

1 Explore & Search

2 Evaluate & Select

3 Consume & Distribute

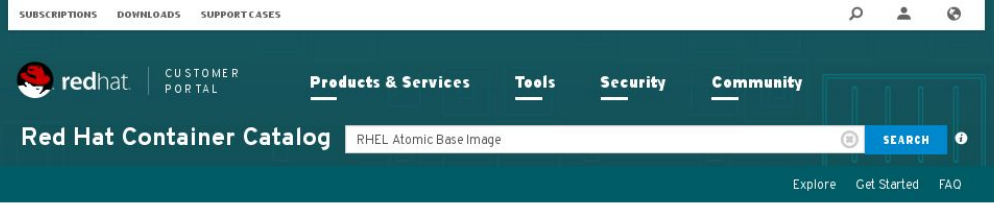
4 Use & Maintain

What are the environment variables defined inside the image?

I would like to learn how this images has been built.

Jane

Developer



RHEL Atomic Base Image

by Red Hat, Inc. | in Product Red Hat Enterprise Linux

`registry.access.redhat.com/rhel-atomic` Updated 5 days ago 7.3-19 : Health Index A

Overview | Get this image | Tech Details | Documentation | Tags

Description

The Red Hat Enterprise Linux 7 Atomic Base Image is designed to be a fully supported foundation for your custom developed applications which are built and updated rapidly, and don't require the extensive libraries or services in the operating system.This image is maintained by Red Hat and updated regularly, following the latest minor release cadence of Red Hat Enterprise Linux. It is designed for containerized applications that don't rely on a full, traditional Linux userspace, but wish to maintain complete runtime compatibility with RHEL. When used as the source for your containers, only one copy will ever be downloaded and cached in your production environment.Use this image just like you would a regular Red Hat Enterprise Linux distribution. Only a minimal set of tools are provided - components such as python, systemd, and yum are not included by default. Extra packages can be installed and updated with a simplified package manager called microdnf.

Application Categories Operating System

Keywords base rhel7 atomic

Hide Repository Specifications

Registry	registry.access.redhat.com
Namespace/Repository	rhel-atomic
Release Category	Generally Available
Repository Size	112.5 MB
Image Versions	4
Subscription Required	No

Most recent tag

View All Tags

Updated 5 days ago

7.3-19

Health Index

A

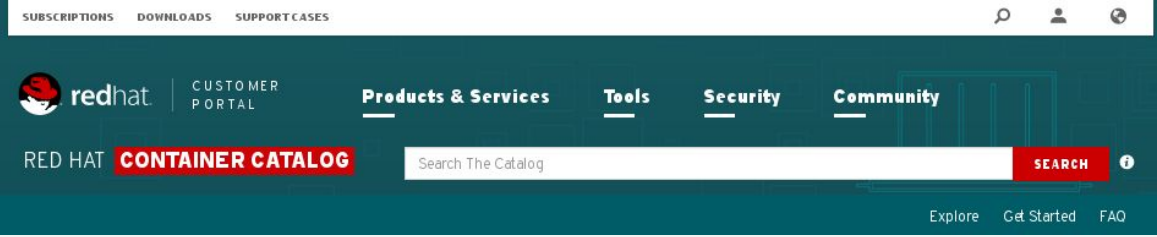
ImageAdvisory

RHBA-2017:1123

Show Image Specifications

overview page shows most relevant repository and latest image version data

additional tabs for consumption guidance, further technical details, surrounding documentation and tag index



Joe

Architect

I want to learn more how to consume and use this image.

Do I need a subscription or license to pull it?

1 Explore & Search

2 Evaluate & Select

3 Consume & Distribute

4 Use & Maintain

I want to pull this image, what do I need to do?

I'm using Red Hat Satellite 6, how can I sync the repository?

Jane

Developer

RHEL Atomic Base Image

by Red Hat, Inc. | in Product Red Hat Enterprise Linux

`registry.access.redhat.com/rhel-atomic` Updated 11 days ago 7.3-15 : Freshness

Overview | Get this image | Tech Details | Documentation | Tags

Choose your platform:

Red Hat Satellite

See Acquiring Red Hat Container Images for general information on acquiring images listed in the Red Hat Container Catalog. Select "Choose your platform" for specific acquire paths.

Satellite 6 supports two different ways to distribute container images to its managed hosts:

A. **External Registries:** You can configure external registries by navigating to **Containers > Registries** in the Web UI of Satellite 6. Note that in this scenario Satellite 6 only triggers commands executed on the corresponding container host. This is a **pass-by** scenario because the image is neither pulled through Satellite 6 nor cached or stored inside Satellite 6. This also applies for the predefined external registry Docker Hub while creating a new container.
B. **Local Content:** Red Hat Satellite allows you to import / synchronize images from local and external registries. Satellite itself can act as an image registry for hosts. However, hosts cannot push changes back to the registry.

In this document we describe how to use Satellite 6 to synchronize external image repositories (**local content, scenario B**).

1 Prerequisites

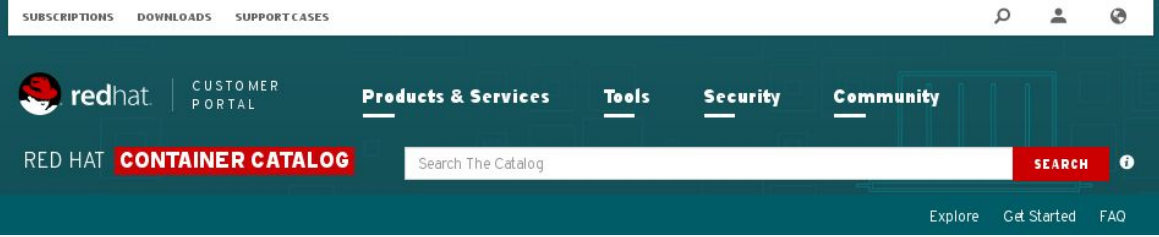
Before container images can be synchronized into Satellite 6 the following prerequisites have to be met:

- Red Hat Satellite 6 has been installed following the Satellite 6 Install Guide
- Subscription Manifest created and uploaded to Satellite 6 to access content
- For CLI Users only: hammer CLI installed and configured

2 Creating a Custom Product

consumption guidance for different container runtime env's and registries

consumption details including copyable command lines



Carl

Security

I want to see which updates are applicable to an image used by us

I want to see an actionable result for applicable security updates

1 Explore & Search

2 Evaluate & Select

3 Consume & Distribute

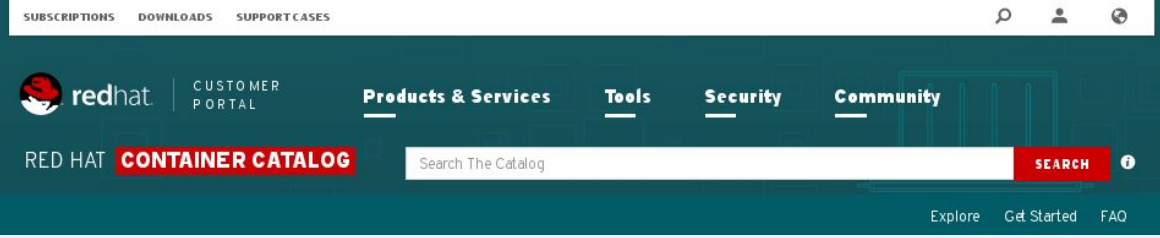
4 Use & Maintain

I want to get a list of all images associated with an advisory ID

I want to see an aggregated and simple freshness description

Jane

Developer

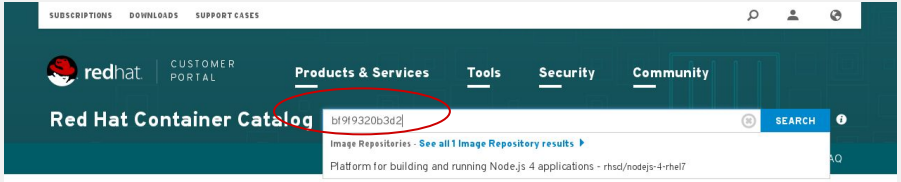


Jane

Developer

How can I get more details around an image I'm using?

```
[root@dherrman ~]# docker images | grep nodejs
registry.access.redhat.com/rhscl/nodejs-4-rhel7                4-11.14
                bf9f9320b3d2        9 weeks ago         444 MB
[root@dherrman ~]#
```



1 Get the image ID using CLI or registry UI

2 Use the container catalog search to find the image

3 Select the right image version and explore details

Red Hat Registry Stats

- 227 repositories
- 2,169 images
- 542,525 RPMs

images are static content bundles

but

security issues emerge frequently

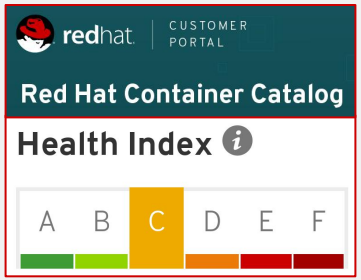
Red Hat Security Statistics 2016

- 3134 advisories
- 5075 unique CVEs
- 2016: 97 crit RHSA

health index indicators

age of the image

unapplied updates



Developed as a **cross-team effort** leveraging Red Hat's Security expertise

Single item status (grade A-F) as an aggregated indicator of container health

Leveraging **Red Hat security data** (advisories) for RPMs and images

Actionable scan results (RPM, Image)

SUBSCRIPTIONS DOWNLOADS SUPPORT CASES

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Products & Services Tools Security Community

Red Hat Container Catalog bf9f9320b3d2 SEARCH

Explore Get Started FAQ

Platform for building and running Node.js 4 applications

by Red Hat, Inc. | in Product Red Hat Enterprise Linux

registry.access.redhat.com/rhscl/nodejs-4-rhel7 Updated 4 days ago 4-11.16 : Health Index A

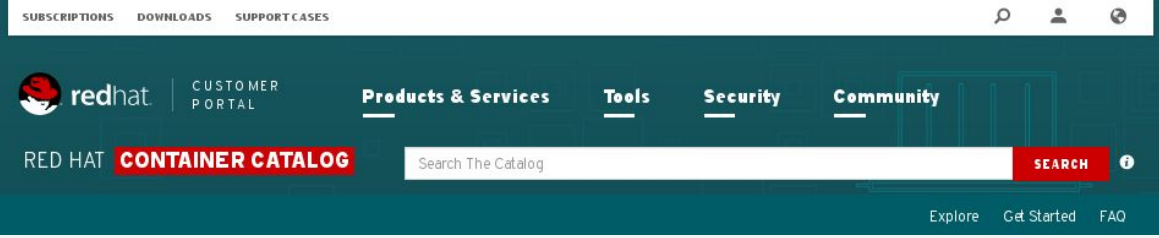
Overview Get this image Tech Details Documentation Tags

Tag Name	Date Pushed	Image Advisory	Health Index	Docker Image ID
4-11.16 4 latest	4 days ago	RHBA-2017:1127	A	9e8704e70637
4-11.15	16 days ago	RHBA-2017:0975	C	79b2e96829e0
4-11.14	2 months ago	RHBA-2017:0404	C	bf9f9320b3d2
4-11.13	3 months ago	RHBA-2017:0174	C	6a532adbfabf

list of all image versions inside this repository

Container Health Index history

key version attributes



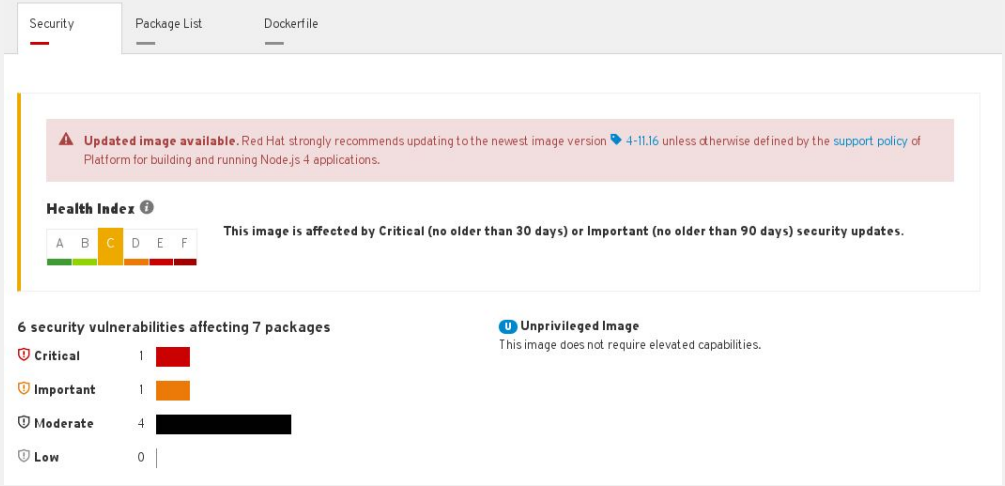
Carl

Security

What is the associated risk with the content inside the image?

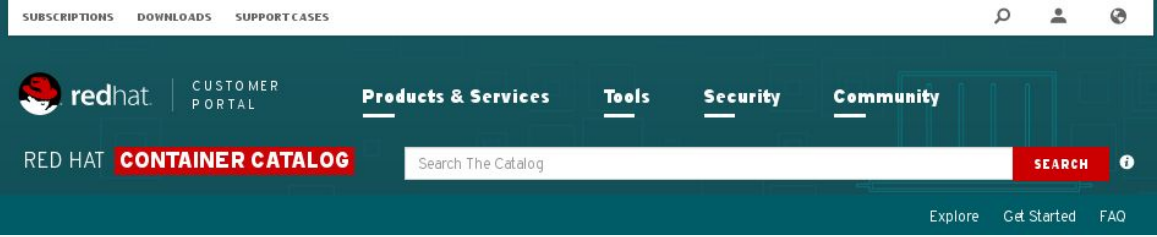
warning if non-current image version

vulnerabilities by advisory severity



Container Health Index based on applicable security updates and its age

privilege requirements



Carl

Security

How can I get rid of those vulnerabilities ?

Affected Packages

7 of 528 packages have security-related updates

Search affected packages

Impact		Affected Package	RPM Advisory	Fixed in Image
Critical	CVE-2017-5461	nss-util-3.21.3-1.1.el7_3.x86_64	RHSA-2017:1100	4-11.16
Critical	CVE-2017-5461	nss-sysinit-3.21.3-2.el7_3.x86_64 nss-tools-3.21.3-2.el7_3.x86_64 nss-3.21.3-2.el7_3.x86_64	RHSA-2017:1100	4-11.16
Important	CVE-2017-2636	kernel-headers-3.10.0-514.10.2.el7.x86_64	RHSA-2017:0933	4-11.16

Red Hat advisory severity

CVE ID

content advisory which contains fix

newer image version which contains fix

What's next?

Upcoming features of future Red Hat Container Catalog releases

- Ecosystem content incl. Red Hat Certified and OpenShift Primed
- Additional acquire paths, image usage documentation
- OpenShift on-premise / Online enhancements
- Subscribe to notifications for products, images and categories for new images, image versions, advisories, freshness grade changes
- Subscriptions / licenses, support policies, FOSS license compliance

You have feedback?
An idea or feature request?

Let's meet at our **User Experience Design** booth.

UXD
EXPERIENCE MATTERS

Partner Pavilion
Exhibit Hall A

Try it out: https://access.redhat.com/containers

RED HAT SUMMIT

THANK YOU

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facebook.com/redhatinc

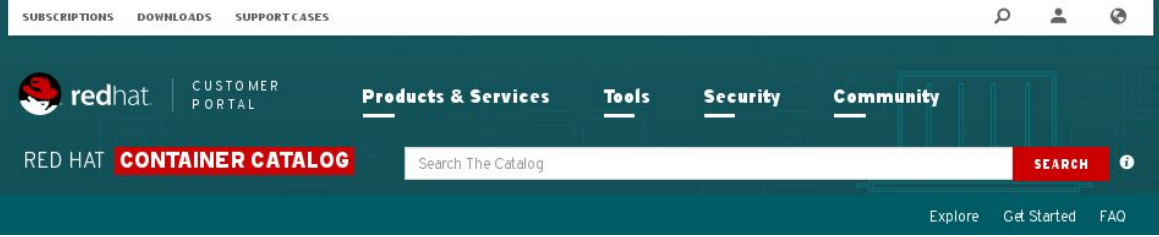
linkedin.com/company/red-hat

twitter.com/RedHatNews

youtube.com/user/RedHatVideos

BACKUP SLIDES

redhat.



1 Explore & Search

2 Evaluate & Select

3 Consume & Distribute

4 Use & Maintain

Search for image advisory ID shows affected images

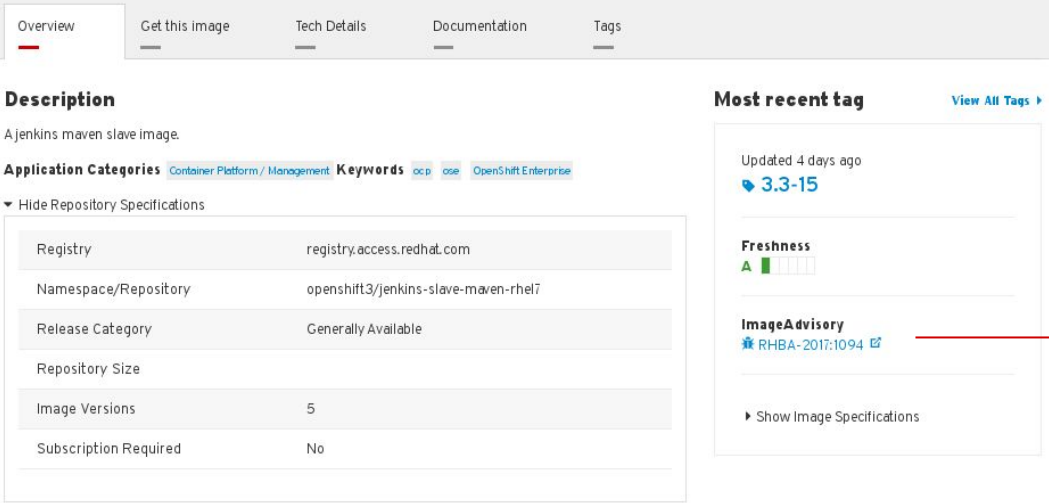
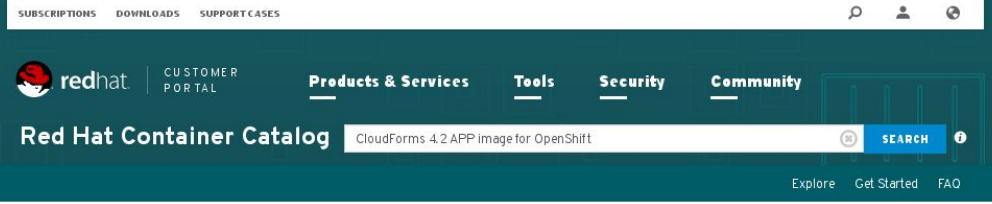


Image advisories shown for each image version



RHEL Atomic Base Image

by Red Hat, Inc. | in Product Red Hat Enterprise Linux

`registry.access.redhat.com/rhel7-atomic` Updated 5 days ago 7.3-19 : Health Index A

Overview | Get this image | Tech Details | Documentation | Tags

Documentation

- https://access.redhat.com/documentation/en-us/red_hat_enterprise_linux_atomic_host/7/html/getting_started_with_containers/using_red_hat_base_container_images_standard_and_minimal#using_rhel_atomic_base_images_minimal
- https://access.redhat.com/documentation/en-us/red_hat_enterprise_linux_atomic_host/7/html/release_notes/red_hat_enterprise_linux_atomic_host_7_3_3#new_features

Articles

- Modifying the Red Hat Enterprise Linux OpenStack Platform Overcloud Image with virt-customize

Solutions

- Deleting unused base images in Red Hat OpenStack Platform
- How to create a container base image in Red Hat Enterprise Linux 7 ?
- Is there a Red Hat Enterprise Linux 5 docker image ?
- RHEL v6.5 Guest image and CVE-2014-0160

Product Page

- Red Hat Enterprise Linux

Surrounding documentation supposed to provide additional guidance for consumption and usage

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RED HAT **CONTAINER CATALOG**

Search The Catalog SEARCH

Explore Get Started FAQ

Jane

Developer

Is the image I'm currently using still current?

release category if not generally available

Nginx 1.6 server and a reverse proxy server **Deprecated**

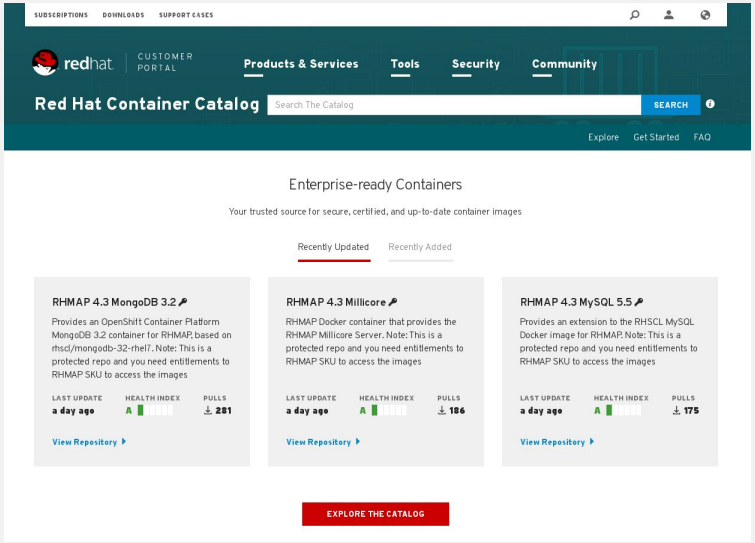
by Red Hat, Inc. | in Product Red Hat Enterprise Linux

`registry.access.redhat.com/rhscl/nginx-16-rhel7` Updated 6 months ago 1.6-9.7

Deprecated This repository has been replaced by rhscl/nginx-18-rhel7

if a newer repository should be used instead

The Solution - Trusted Enterprise Content



- Trusted Container Images
- Container Health Index
- User Experience First
- Same Red Hat Quality
- Vast Security Experience

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