



RHEL 9 Custom Image Import to OCI with Red Hat Image Builder

2nd of May 2025 | Version 1.2

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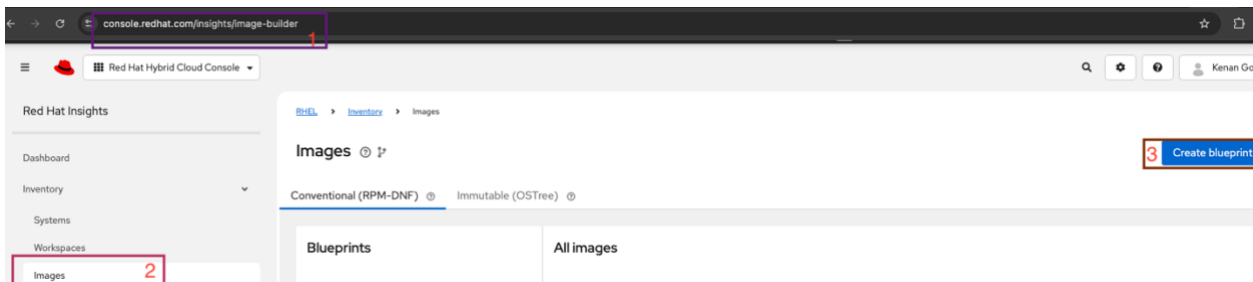
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RHEL 9 Custom Image Import to OCI with Red Hat Image Builder

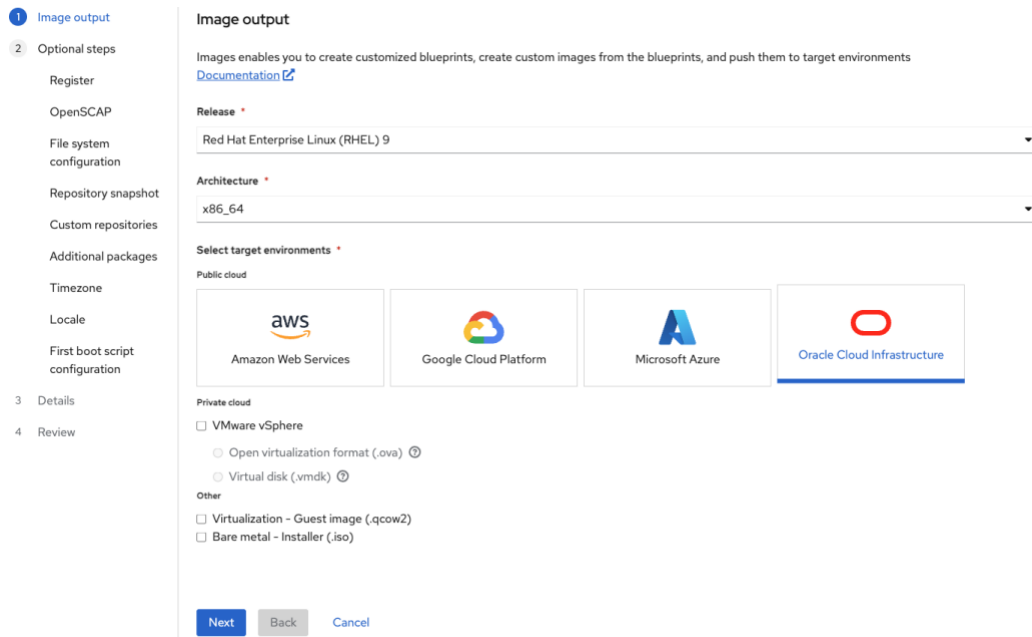
In this tutorial, we will explain how to import a RHEL 9 image from Red Hat Hybrid Cloud Console to OCI as a Custom Image. Then, we will create an instance from this Custom Image.

1.1 Creating the RHEL9 Image with Builder

- Connect to <https://console.redhat.com/insights/dashboard>. You can create a free Red Hat Account with your email address and credentials. You can use your company account if you have. Subscriptions can be utilized as we will see in execution steps.
- Go to **Images** Sections under **Inventory** and Click **Create Blueprint**.



- Image Output Selection
 1. Release: Red Hat Enterprise Linux 9
 2. Architecture: x86_64
 3. Select Target Environment: Oracle Cloud Infrastructure
 4. Private Cloud and Other: Leave Unselected



- Optional Steps

- If you have a **Subscription**, you can unselect Registration Method: Automatically register and enable advanced capabilities section. then you can register VM after OS booting. Alternatively, you can select this option.

1 Image output
2 **Optional steps**
Register
OpenSCAP
File system configuration
Repository snapshot
Custom repositories
Additional packages
Timezone
Locale
First boot script configuration
3 Details
4 Review

Register systems using this image

You can either automatically register your systems with Red Hat to enhance boot.

Registration method

☒ Automatically register and enable advanced capabilities
[Show additional connection options](#)

Activation key to use for this image ?

activation-key-default-0dkw3y

Create and manage activation keys on the [Activation keys page](#)

Selected activation key

Name:	activation-key-default-0dkw3y
Role:	Not defined
SLA:	Self-Support
Usage:	Not defined
Additional repositories: ?	None

- You can leave **OpenSCAP Profile Blank** or You can choose any profile listed in the dropdown menu according to your regulatory compliance profile.

2 **Optional steps**
Register
OpenSCAP
File system configuration
Repository snapshot

OpenSCAP enables you to automatically monitor the adherence of your registered RHEL systems to a selected regulatory compliance profile.
[Documentation](#)

OpenSCAP profile ?

Select a profile

- For File system configuration, you can either select **Automatic partitioning** or you can **Manually configure partitions** by creating entries for Mount Points and Minimum Size as per required layout. Configuration will reflect to /etc/fstab file and disks will be mounted in filesystem.

1 Image output

2 Optional steps

3 Details

4 Review

Register

OpenSCAP

File system configuration

Repository snapshot

Custom repositories

Additional packages

Timezone

Locale

First boot script configuration

File system configuration

Define the partitioning of the image

☐ Recommended Use automatic partitioning
 Automatically partition your image to what is best, depending on the target environment(s)

☒ Manually configure partitions
 Manually configure the file system of your image by adding, removing, and editing partitions

Configure partitions

Create partitions for your image by defining mount points and minimum sizes. Image builder creates partitions with a logical volume (LVM) device type.

The order of partitions may change when the image is installed in order to conform to best practices and ensure functionality.
[Read more about manual configuration here](#)

Mount point	Type	Minimum size		
/	xfs	10	<input checked="" type="checkbox"/>	GiB
/home	xfs	1	<input checked="" type="checkbox"/>	GiB
/data	xfs	100	<input checked="" type="checkbox"/>	GiB

[+ Add partition](#)

- **Repository Snapshot:** You can select Use latest content unless you have a snapshot with target date and existing images.

1 Image output

2 Optional steps

Register

OpenSCAP

File system configuration

Repository snapshot

Custom repositories

Additional packages

Repository snapshot

Control the consistency of the packages in the repository used to build the image.
[Create and manage repositories here](#)

☒ Use latest content
 Use the newest repository state available when building this image.

☐ Use a snapshot
 Target a date and build images with repository information from this date.

Use latest content

Image Builder will automatically use the newest state of repositories when building this image.

- You can add any **custom repositories** if you have already. Otherwise, you can leave it blank to get the latest repository available in the system.

1 Image output
2 **Optional steps**
Register
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First boot script configuration
3 Details

Custom repositories

Select the linked custom repositories from which you can add packages to the image.
[Create and manage repositories here](#)

0 selected

All
Selected

No Custom Repositories

Repositories can be added in the "Repositories" area of the console. Once added, refresh this page to see them.

- Blueprint has all packages included in the images. you can search and packages in the additional package section.

1 Image output
2 **Optional steps**
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Additional packages

Blueprints created with Images include all required packages.

Search for package groups

Search for package groups by starting your search with the '@' character. A single '@' as search input lists all available package groups.

0 - 0 of 0

Package name	Description	Package repository	Support
<div> <p>Search above to add additional packages to your image.</p> </div>			

- You can select **Timezone** as per your location and requirement. Additionally, you can set **NTP Server** in this section.

2 Optional steps

Register
OpenSCAP
File system configuration
Repository snapshot
Custom repositories
Additional packages
Timezone
Locale
First boot script configuration

Select a timezone for your image.

Timezone

Asia/Dubai X ▼

NTP servers

Add NTP servers

- You can select locale settings by selecting **Language and Keyboard**.

2 Optional steps

Register
OpenSCAP
File system configuration
Repository snapshot
Custom repositories
Additional packages
Timezone
Locale
First boot script configuration

Select locale for your image.

Languages

Select a language ▼

en_US.UTF-8 X

Keyboard

en X ▼

- You can upload or write a **custom script** to be executed on the first boot of OS.


1 Image output
2 **Optional steps**
3 Details

Register
OpenSCAP
File system configuration
Repository snapshot
Custom repositories
Additional packages
Timezone
Locale
First boot script configuration

First boot configuration

Configure the image with a custom script that will execute on its first boot.

> **Important:** please do not include sensitive information



Start editing

Drag and drop a file or upload one.

Browse

[Start from scratch](#)

- You can give any **Name and Description to Blueprint in Details** section.

1 Image output
2 Optional steps
3 **Details**
4 Review

Register
OpenSCAP
File system configuration
Repository snapshot
Custom repositories
Additional packages
Timezone
Locale
First boot script configuration

Details

Enter a name to identify your blueprint. If no name is entered, the images created from this blueprint will u

Blueprint name *

The name can be 2-100 characters with at least two letters or numbers

Blueprint description

- After you review the settings, **Select Create Blueprint and Build Images**. It will start image creation process. You can Monitor the image build progress under Images. It will take 10-15 minutes to complete. When image is ready, you will able to see Image Link associated to OCI Object Storage URL.

First boot

Revisit step →

First boot script

Disabled

Details

Revisit step →

Blueprint name

OCI-RHEL9-CustomImage

Create blueprint and build image(s)

Create blueprint

Back

Cancel

Images ⓘ ⓘ

Create blueprint

Conventional (RPM-DNF) ⓘ

Immutable (OSTree) ⓘ

Blueprints

Search by name or description

View all

OCI-RHEL9-CustomImage

Version 1

OCI-RHEL9-CustomImage images

All versions

Build images

Edit blueprint

1-1 of 1

Name	Updated	OS	Target	Version	Status	Instance
OCI-RHEL9-CustomImage	Apr 17, 2025	RHEL 9	Oracle Cloud Infrastructure	1	Image build in progress	Image link

1-1 of 1

OCI-RHEL9-CustomImage images

All versions

Build images

Edit blueprint

Name	Updated	OS
OCI-RHEL9-CustomImage	Apr 17, 2025	RHEL 9

Launch an OCI image

To run the image copy the link below and follow the steps below:

1. Go to "Compute" in Oracle Cloud and choose "Custom Images".

2. Click on "Import image", choose "Import from an object storage URL".

3. Choose "Import from an object storage URL" and paste the URL in the "Object Storage URL" field. The image type has to be set to QCOW2 and the launch mode should be paravirtualized.

https://[redacted]objectstorage.us-ashburn-1.oci.customer-oci.com/p/[redacted]b/image-builder-crc-production/o/osbuild-upload-[redacted]

Read more about launching OCI images

1.2 Creating Custom Image in OCI Console

Now we can connect to OCI Console and Import the image as Custom Image.

- Navigate to **Compute** → **Custom Images** → **Import Image** and **Upload the Image** by selecting given URL. Import process will take some time up to 20 minutes.

Import image

Operating system

RHEL

☐ Import from an Object Storage bucket

☒ Import from an Object Storage URL

Object Storage URL

https://[redacted]objectstorage.us-ashburn-1.oci.customer-oci.com/p/[redacted]

Image type

VMDK

Virtual machine disk file format. For disk images used in virtual machines.

QCOW2

For disk image files used by QEMU.

OCI

For images that were exported from Oracle Cloud Infrastructure. The launch mode is specified in the .oci file and can't be changed in the Console.

Launch mode

Paravirtualized mode

For virtual machines that [support paravirtualized drivers](#), created outside of Oracle Cloud Infrastructure.

Emulated mode

For virtual machines that [don't support paravirtualized drivers](#), created outside of Oracle Cloud Infrastructure from older on-premises physical or virtual machines.

Native mode

For images that were exported from Oracle Cloud Infrastructure.

Cancel

Import image

Custom images

An image is a template of a virtual hard drive. It determines the operating system and other software for an instance. You can [create custom images](#), [export and import images](#) across tenancies and regions, and [bring your own image](#) to the cloud.

Search

Applied filters

Compartment: Kenan

Import image

Name	State	Original image	Billable size (GB)	Created	
RHEL9-CustomImage	Importing	-	0	Apr 17, 2025, 07:33 UTC	...

- After successful upload, **Custom Image** will be Available. You can begin creating the Compute instance from this image now. After submitting the request, Instance will be created from RHEL9 Custom Image.

Custom images

RHEL9-CustomImage Available

Actions

Create instance

Details

Work requests

Tags

Custom image information

OCID

ocid1.image.oc1.eu-frankfurt-1-[redacted]

Copy

Compartment

[redacted]

Size (MB)

47094

Billable size (GB)

2

You are charged for stored images, as shown in the [cloud price list](#). Images created before May 23, 2021 do not incur charges.

Launch mode

PARAVIRTUALIZED

Created

[redacted]

Operating system

Custom

Launch options

Launch options include the networking type and boot volume attachment type used when launching a virtual machine instance.

NIC attachment type

PARAVIRTUALIZED

1 Basic information

Image

Change image

Image

RHEL9-CustomImage

Security

BM Confidential computing

Shape

Change shape

AMD

VM.Standard.E6.Flex

Shape build

Virtual machine, 1 core OCPU, 11 GB memory, 1 Gbps network bandwidth

Security

Shielded instance

Advanced options

- Now, the Instance is ready and built from RHEL9.

	Name	State	Image	Public IP	Private IP	Shape	OCPU count	
<input type="checkbox"/>	RHEL9	Running	RHEL9-CustomImage	[redacted]	[redacted]	VM.Standard.E6.Flex	1	...

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- You can verify the **OS version** by connecting it via ssh. Run the command **#cat /etc/redhat-release**. Important note is user must be **cloud-user**.

```
kgorucu@Mac ~ % ssh cloud-user@
The authenticity of host ' ( )' can't be established.
ED25519 key fingerprint is SHA256:WeZSuNfJTRwVTuj.
This key is not known by any other names.
Are you sure you want to continue connecting (yes/no/[fingerprint])? yes
Warning: Permanently added ' (ED25519)' to the list of known hosts.
Register this system with Red Hat Insights: rhc connect

Example:
# rhc connect --activation-key <key> --organization <org>

The rhc client and Red Hat Insights will enable analytics and additional
management capabilities on your system.
View your connected systems at https://console.redhat.com/insights

You can learn more about how to register your system
using rhc at https://red.ht/registration
[cloud-user@rhel9 ~]$ cat /etc/redhat-release
Red Hat Enterprise Linux release 9.5 (Plow)
```

- Complete! We have RHEL9 OS running on OCI as a Custom Image! You can proceed with hardening and standardizing the OS.

1.3 Known and Potential Issues

- Do not change any configuration related to NetworkManager services manually like hardening /etc/resolv.conf. It will lead critical problems while resolving DNS and reaching out to other instances or on premises servers.