



## Edge management 1-latest

# Create RHEL for Edge images and configure automated management

Getting started with edge management in the Red Hat Hybrid Cloud Console



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## Abstract

You can build an image, download it, install it on a system, and then register that system so it can receive updates.

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## PREFACE

Insights image builder provides the controls and information to keep your systems secure, available and operating efficiently. Update all your systems with secure, over the air updates. Organize your systems in groups that match your business and send updates that match your workflows. Use Red Hat Insights to find and fix potential vulnerabilities in your edge systems with one click.

With the Insights image builder application, you can create an image and manage the packages associated with an image. You can build an image, download it, install it on a system, and then register that system so it can receive updates.

Provisioning and registration involve the following high-level tasks:

- Build a Red Hat Enterprise Linux for Edge image using the Insights image builder application.
- Download the image and modify it with your organization credentials, using Podman and the fleet management ISO utility.
- Deploy the image to systems.
- View systems in the edge management and Red Hat Insights applications, in the Red Hat Hybrid Cloud Console.

## MAKING OPEN SOURCE MORE INCLUSIVE

Red Hat is committed to replacing problematic language in our code, documentation, and web properties. We are beginning with these four terms: master, slave, blacklist, and whitelist. Because of the enormity of this endeavor, these changes will be implemented gradually over several upcoming releases. For more details, see [our CTO Chris Wright's message](#).



# CHAPTER 1. CREATING CUSTOM REPOSITORIES

Define your repository with third party information to be able to add packages from the third party repository to your customized images.

## Prerequisites

- You have administrator access to the Red Hat Hybrid Cloud Console web user interface.
- You have an account on Red Hat Customer Portal with an Insights subscription.
- You must have the URL link to your custom repository.

## Procedure

1. Access the [Red Hat Hybrid Cloud Console](#) platform and log in.
2. Click the **Settings icon** (⚙️) in the top right and select **Settings**.
3. Optionally, access the direct link [Repositories](#).
4. Select **Repositories** in the left side menu.
5. Click the **Add repositories** button. The **Add repositories** wizard opens.
6. Enter the following information:
  - a. Mandatory - Name.
  - b. Mandatory - URL.
  - c. From the drop-down menu, choose the Restrict architecture. You can enable all the architectures or select one.
  - d. From the dropdown menu, choose the Restrict OS version. You can enable all the OS versions or select one.
  - e. GPG key - Drag or upload your file with the GPG key. You can also paste the URL or value of the existing GPG key.
7. Optional: If you want to add another repository, click **⊕ Add another repository** and repeat the step 5.
8. Click **Save**. The system validates the repository status.
  - a. If your repository is marked as **Invalid**, check the repository URL you added.

The **Custom Repositories** window opens, listing all the custom repositories you added, the architecture you chose, versions, how many packages you added, and the repository status.

## Verification

1. Open the list of custom repositories and verify that the repository you added is listed.

## CHAPTER 2. BUILDING A RHEL IMAGE WITH CUSTOM REPOSITORIES

Start by using the Insights image builder application to build a RHEL for Edge image. RHEL for Edge is optimized for edge computing to provide faster data delivery. It also enables updates with [OSTree](#), which is a git-like model of updates that sends only the changes in your update, so that updates are quick and rollback is easy. Optionally, you can add packages from custom repositories outside of Red Hat to customize your RHEL for Edge image and enable it with the features and packages that you need for your business.



### WARNING

Using RHEL for Edge customized images that were created using the on-premise version of RHEL image builder is not supported by the Insights image builder application. For more details, see [Edge images supportability](#).

### Prerequisites

You must have a Red Hat Hybrid Cloud Console account.

### Procedure

1. Access [Red Hat Hybrid Cloud Console](#) platform and log in.
2. From the console dashboard, navigate to **Red Hat Insights > RHEL > Inventory > Images**The Insights image builder environment opens.
3. In the image builder application, click the **Immutable (OSTree)** tab.
4. Click **Create new image**.  
On the **Create image** wizard, follow the steps:
5. On the **Details** page, enter an image name and click **Next**.
6. On the **Options** page, select the following details:
  - a. Select the image base release for your image.
  - b. Select the option **RHEL for Edge Installer (.iso)**
  - c. Click **Next**.
7. On the **System registration** page, follow the steps:
  - a. Enter a username. This is the username to log in to your system after it is created.
  - b. Enter a public SSH key to create a user for your image.
  - c. Click **Next**.
8. On the **Activation Keys** page, follow the steps:

- a. From the dropdown menu, choose an activation key to use for the image. See the [Creating an activation key](#) documentation for more details.  
You can manage the activation key that you chose by accessing [Activation keys](#) in the Console.
  - b. Click **Next**.
9. On the **Content** page:
- a. On the **Additional Red Hat packages** page, add any core RHEL package, for example, **emacs**.
    - i. In the **Available packages** search field, enter **emacs** and click the search icon.
    - ii. Select **emacs** from the search results.
    - iii. Click the **Add Selected** or **Add all** arrow button to add **emacs** to the list.
  - b. Click **Next**.
10. On the **Custom repositories** page:
- a. Select the custom repository you added.
  - b. Click **Next**.
11. On the **Review** page:
- a. Check the data is correct and click **Create image**.

## Verification

The image may take some minutes to build. After your image is created, you can see it on the **Images** page. You can see the following image details:

- Name
- Version
- Created
- Type
- Release
- Status
- Created or Updated
- Description
- Packages
- Changes from previous version
- User information, such as username and ssh key.

**NOTE**

Every time that you created an updated version of the image, the system keeps using the same activation key that you previously added to the image. To change the activation key, you need to manually registry the system again.

**Next Steps**

After you build the image, install it on your device. When you run the Subscription Manager tool, you can see that the device was registered with the Activation key that you chose. If you did not choose an activation key, then you can proceed to register your system with the Red Hat Remote Host Configuration (rhc) client.

**Additional resources**

- [How to start the upgrade process of an Edge Management deployed system](#) .
- [Edge images supportability](#).

## CHAPTER 3. LOCATING YOUR PREVIOUS CREATED IMMUTABLE (OSTREE) IMAGES

You can list your immutable systems on the Hosted Inventory dashboard. You can see detailed information about your immutable systems, update one or more systems, and add or remove these systems to a group.



### NOTE

If you do not have a previous Immutable OSTree system created, the Immutable(OSTree) tab is not displayed. In this case, you must create your Immutable (OSTree) images from image builder. See [Building an OSTree image with custom repositories](#) .

+ To locate your images in the image builder dashboard, complete the following steps.

### Prerequisites

- You must have a Red Hat Hybrid Cloud Console account.

### Procedure

1. Access [Red Hat Hybrid Cloud Console](#) platform and log in.
2. From the console dashboard, navigate to **Red Hat Insights > RHEL > Inventory > Images**The Insights image builder environment opens.
3. Locate your image by name.
  - a. Type your image name in the search bar menu.
  - b. If your image exists, click the image name.  
You can see the image details, such as version, OSTree commit hash, SSH key, added packages, among others.

## CHAPTER 4. CONFIGURING AUTOMATIC REGISTRATION AND MANAGEMENT

You can automatically register your systems with Red Hat by using an activation key for the image. You can add an activation key to the image during the image building process. For that, follow the steps to enabling automatic registration with the Red Hat Remote Host Configuration (rhc) client.

### Prerequisites

- You must have a Red Hat Hybrid Cloud Console account.
- You must have a Remote Host Configuration and Management org ID and activation key for your RHEL subscription. If you have Organization Administrator access for your account, you can set up an activation key at the [Activation keys](#) page.
- You started to create a new OSTree image in the Hybrid Cloud Console. See [Building a RHEL image with custom repositories](#).

### Procedure

1. In the **Activation Keys** page, perform the following steps:
  - a. From the **Activation key to use for this image** dropdown menu, select one activation key to use for the image from your Organization ID.  
**No activation keys found** - If you do not have an activation key from your Organization ID, you can choose the "default activation key", a preset key with the basic configuration, by completing the following step:
  - b. Click the **Create activation key** button. The **Select activation key** dropdown menu enables the "activation-key-default".  
Manage the activation key by accessing [Activation keys](#). You can edit the **System Purpose**, the **Workload**, and also add **Additional repositories**.
2. Click **Next**.



### NOTE

After you register a RHEL for Edge device, it is not automatically removed after a period of inactivity. If you want to unregister and remove the device from the [Red Hat Hybrid Cloud Console](#), you must unregister your device to remove it. To unregister the device, go to the Red Hat Hybrid Cloud Console and click **Red Hat Insights > Inventory > Images**, find your system device, select it, and click **Delete**.

### Additional resources

- [Creating an activation key](#)

## CHAPTER 5. UPDATING AN IMAGE

You can update the packages and the package version for an image you have already created. For that, you can use one of the following options to perform the update.

- Use the **Update** button in the dashboard to add the latest package version update to the image.
- Use the **More options icon ( ⋮ )** to the image you plan to update to be able to choose the package version to update your image. For example, if the system is running the version 2 and you are running the version 5, you can pick one of the versions between 2 and 5 to update the image.



### WARNING

Using RHEL for Edge customized images that were created using the on-premise version of RHEL image builder is not supported in the Red Hat Hybrid Cloud Console.

There is no support for updating an Edge system by using the CLI. You can only update your Edge systems by using the Red Hat Hybrid Cloud Console.

### Prerequisites

- You must have a Red Hat Hybrid Cloud Console account.
- You must have built an image in the Red Hat Hybrid Cloud Console.

### Procedure

1. Access [Red Hat Hybrid Cloud Console](#) platform and log in.
2. From the console dashboard, navigate to **Red Hat Insights > RHEL > Inventory > Images**The Insights image builder environment opens.
3. In the image builder application, click the **Immutable (OSTree)** tab.
4. Choose between one of the 2 ways to update your image:  
Either the click the **Update button** or click the **More options icon ( ⋮ )**
5. Click **Update image**.
6. On the **Update image: *image-name*** wizard, follow the steps:
  - a. On the **Details** page, enter a description for the image.
  - b. Click **Next**.
  - c. On the **Options** page, follow the steps:
    - i. Select the image base release for your image.
    - ii. To build an update, clear the **RHEL for Edge installer (.iso)** check box.

- iii. Click **Next**.
- d. On the **Content** page:
  - i. On the **Additional Red Hat packages** page, add any core RHEL package, for example, **emacs**.
    - A. In the **Available packages** search field, enter **emacs** and click the search icon.
    - B. Select **emacs** from the search results.
    - C. Click the **Add Selected** or **Add all** arrow button to add **emacs** to the list.
  - ii. Click **Next**.
  - iii. On the **Custom repositories** page:
    - A. Select the custom repository you added.
  - iv. On the **Additional custom packages** page:
    - A. Add the packages that you want.
  - v. Click **Next**.
  - vi. On the **Review** page:
    - A. Check the data is correct and click **Update image**.

#### Additional resources

- [How to start the upgrade process of an Edge Management deployed system](#) .
- [Edge Management supportability](#).



## CHAPTER 6. UPDATING A SYSTEM

You can send an update to a system through the dashboard application. For that, you can use the **Update** button in the dashboard to add the latest package version update to the image. You must use the following procedure to perform the update.




### WARNING

Currently, there is no support for updating an Edge system by using the CLI. You can only update your Edge systems by using the Red Hat Hybrid Cloud Console. See [How to start the upgrade process of an Edge Management deployed system](#) .

### Prerequisite

- You must have a Red Hat Hybrid Cloud Console account.
- A system is built from an image and registered with the Red Hat Hybrid Cloud Console.
- An update to that image has been built.

### Procedure

1. Access [Red Hat Hybrid Cloud Console](#) platform and log in.
2. From the console dashboard, navigate to **Red Hat Insights > RHEL > Inventory > Systems**
3. Click the **More options** icon (  ) for the system you want to update.
4. Click **Update Image**. The Status column for the system will say **Update available** if your image update was successful.
5. On the **Update** page, select an image version. If there are two or more newer image updates for your system, you can learn more about any package changes and choose the one you want.
6. Click **Update system**.
7. Confirm the update completed successfully in the dashboard.

### Verification

From the console dashboard, navigate to **Red Hat Insights > RHEL > Inventory > Systems**

- If the update was successful, the system status is **Up to date**.
- If the system status is **Error** or **Unresponsive**, the system did not update properly. Click the Status to learn more about the failure.
- If the system status is **Error**, you can try the update again. Click the **Error** status, then click **Retry**.

### Additional resources

- [How to start the upgrade process of an Edge Management deployed system](#) .

## CHAPTER 7. UPDATING MULTIPLE SYSTEMS

You can send an update to Edge several systems through the dashboard application. If the image is the same for all the systems you select, you can update them at the same time. For that, you can select the Edge several systems and use the **Update** button in the dashboard. The action adds the latest package version update to the image.

Optionally, you can select one image and use the **More options icon ( ⋮ )** to update, to be able to choose the package version for that image.

### Prerequisites

- You must have a Red Hat Hybrid Cloud Console account.
- A system is built from an image and registered with the Red Hat Hybrid Cloud Console.
- You built an update to that image.

### Procedure

1. Access [Red Hat Hybrid Cloud Console](#) platform and log in.
2. From the console dashboard, navigate to **Red Hat Insights > RHEL > Inventory > Systems**
3. Select the systems that you want to update. The Status column for the system will say **Update available** if your image update was successful.
4. In the **Systems** toolbar, click **Update** to apply the update to the systems.
5. Review the information about the update and click **Update system**.
6. Confirm that the update completed successfully in the image dashboard.

### Verification

- From the console dashboard, navigate to **Red Hat Insights > RHEL > Inventory > Systems** if the update was successful, the system status is **Up to date**.
- If the system status is **Error** or **Unresponsive** the system did not update properly. Click the status to learn more about the failure.
- If the system status is **Error**, you can try the update again. Click the **Error** status, then click **Retry**.

## CHAPTER 8. CONFIGURING EVENT NOTIFICATION

You can use the Red Hat Hybrid Cloud Console settings to configure notifications for events that happen in the edge management. At the moment, the following notifications are configurable:

- Image Creation
- Update Devices

### Prerequisites

- You have administrator access to the Red Hat Hybrid Cloud Console web user interface.
- You have an account on Red Hat Customer Portal with an Insights subscription.

### Procedure

To configure the notifications, you must:

1. Create a behavior group.
2. Select the **Send an email** action.
3. Choose the recipients of that event notification.
4. Associate it to the event type or types that you want.

With that, every time a device is updated or a new image is created, the group of recipients will be notified in an email about the changes.

To learn how to set email notifications, see [Configuring notifications for recommendations](#).