



Red Hat Insights 1-latest

Assessing and remediating system issues using Red Hat Insights Tasks with FedRAMP

Use predefined Insights Tasks playbooks to resolve issues on your systems

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Abstract

Red Hat Insights Tasks helps you assess and remediate system issues by using predefined playbooks called Tasks with FedRAMP[®]. 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.

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CHAPTER 1. OVERVIEW OF INSIGHTS FOR RED HAT ENTERPRISE LINUX TASKS

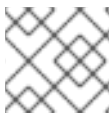
Tasks is part of the Automation Toolkit for Insights for Red Hat Enterprise Linux. Tasks offer predefined playbooks that help you maintain the health of your infrastructure by simplifying and solving complex problems using automated tasks. Tasks solve specific problems and are typically executed one time on your systems to accomplish things such as, detecting a high-profile vulnerability on your systems or preparing systems for a major upgrade. You can find tasks in [Red Hat Hybrid Cloud Console > Red Hat Insights > RHEL > Automation Toolkit > Tasks](#).

Insights for Red Hat Enterprise Linux anticipates your need to solve problems and get things done in your infrastructure, and continuously adds specific tasks to the Automation Toolkit. Tasks include the following:

- RHEL pre-upgrade analysis utility task
- Pre-conversion analysis utility task
- Convert to RHEL from CentOS Linux 7

Some important information you will need to get started with executing a task are:

- [User Access considerations](#). Find out what role or level of user access you need to complete tasks.
- [Registering and connecting hosts to Insights](#) Using tasks requires you to register and connect systems to Insights.
- [Executing Tasks using Red Hat Insights](#) Understand how to find and execute tasks.



NOTE

System requirements to execute different tasks might vary.

1.1. USER ACCESS SETTINGS IN THE RED HAT HYBRID CLOUD CONSOLE

User Access is the Red Hat implementation of role-based access control (RBAC). Your Organization Administrator uses User Access to configure what users can see and do on the Red Hat Hybrid Cloud Console (the console):

- Control user access by organizing roles instead of assigning permissions individually to users.
- Create groups that include roles and their corresponding permissions.
- Assign users to these groups, allowing them to inherit the permissions associated with their group's roles.

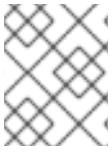
All users on your account have access to most of the data in Insights for Red Hat Enterprise Linux.

1.1.1. Predefined User Access groups and roles

To make groups and roles easier to manage, Red Hat provides two predefined groups and a set of predefined roles.

1.1.1.1. Predefined groups

The **Default access group** contains all users in your organization. Many predefined roles are assigned to this group. It is automatically updated by Red Hat.



NOTE

If the Organization Administrator makes changes to the **Default access** group its name changes to **Custom default access** group and it is no longer updated by Red Hat.

The **Default admin access** group contains only users who have Organization Administrator permissions. This group is automatically maintained and users and roles in this group cannot be changed.

On the Hybrid Cloud Console navigate to [Red Hat Hybrid Cloud Console > the Settings icon \(⚙\) > Identity & Access Management > User Access > Groups](#) to see the current groups in your account. This view is limited to the Organization Administrator.

1.1.1.2. Predefined roles assigned to groups

The **Default access** group contains many of the predefined roles. Because all users in your organization are members of the **Default access** group, they inherit all permissions assigned to that group.

The **Default admin access** group includes many (but not all) predefined roles that provide update and delete permissions. The roles in this group usually include **administrator** in their name.

On the Hybrid Cloud Console navigate to [Red Hat Hybrid Cloud Console > the Settings icon \(⚙\) > Identity & Access Management > User Access > Roles](#) to see the current roles in your account. You can see how many groups each role is assigned to. This view is limited to the Organization Administrator.

See [User Access Configuration Guide for Role-based Access Control \(RBAC\)](#) for additional information.

1.1.2. Access permissions

The **Prerequisites** for each procedure list which predefined role provides the permissions you must have. As a user, you can navigate to [Red Hat Hybrid Cloud Console > the Settings icon \(⚙\) > My User Access](#) to view the roles and application permissions currently inherited by you.

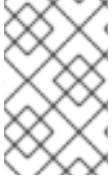
If you try to access Insights for Red Hat Enterprise Linux features and see a message that you do not have permission to perform this action, you must obtain additional permissions. The Organization Administrator or the User Access administrator for your organization configures those permissions.

Use the Red Hat Hybrid Cloud Console Virtual Assistant to ask "Contact my Organization Administrator". The assistant sends an email to the Organization Administrator on your behalf.

1.1.3. User Access roles for Insights Tasks users

The following role enables enhanced access to remediations features in Insights for Red Hat Enterprise Linux:

- **Tasks administrator.** The Tasks administrator role permits access to all Tasks capabilities to remotely execute Tasks on Insights-connected systems.

**NOTE**

All members of the Default Admin Access group can also execute Tasks.

A Tasks viewer role does not exist.

CHAPTER 2. REGISTERING AND CONNECTING SYSTEMS TO RED HAT INSIGHTS TO EXECUTE TASKS

To work with Red Hat Insights, you need to register systems to Insights, and enable system communication with Insights. In addition to communicating with Insights, you need to enable and install dependencies on Satellite 6.11+, Remote Host Configuration (rhc), **rhc-worker-playbook** and **ansible**, so that you can use task services, and other services in the Automation Toolkit.

For more information about enabling system communication with Insights, and addressing dependencies, see:

- [Enabling host communication with Insights](#) in the [Red Hat Insights Remediations Guide](#) .

Additional resources

- [Red Hat Insights data and application security](#)

CHAPTER 3. EXECUTING TASKS USING RED HAT INSIGHTS

You can execute tasks on remote systems in the Red Hat Hybrid Cloud Console directly from Red Hat Insights Tasks.

Tasks you can execute are:

- RHEL pre-upgrade analysis utility tasks.
- Pre-conversion analysis utility tasks.
- Convert to RHEL from CentOS Linux 7.



NOTE

Prerequisites and actions required to execute specific Insights tasks will vary.

Here are general instructions to execute a task.

Prerequisites

- You are logged in to the Red Hat Hybrid Cloud Console.
- You are a member of a User Access group with the **Tasks administrator** role.
- You have connected systems and addressed dependencies for Remote Host Configuration (rhc), **rhc-worker-playbook** and **ansible-core**, as needed. See [Enabling host communication with Insights](#) in the *Red Hat Insights Remediations Guide*.
- You have addressed dependencies for Satellite 6.11+. See [Enabling host communication with Insights](#) in the *Red Hat Insights Remediations Guide*.
Services in the Insights Automation Toolkit have similar dependency requirements that must be met before Red Hat Insights users can execute playbooks for remediations and tasks.

Procedure

1. Navigate to [Automation Toolkit > Tasks](#)
2. Select a task to execute and click **Run Task**.
3. Optional: Edit the default task name to customize it for your needs.



NOTE

After you execute the task, you will not be able to change the task name again.

4. Make note of any task-specific prerequisites shown in the brief description of the task.
5. Select the systems on which to execute the task. You can use filters to search and filter systems by:
 - **Name**
 - **Operating System**

- Tag

RHEL pre-upgrade analysis utility

Task description
For connected systems running versions of RHEL 7 or RHEL 8, the RHEL pre-upgrade analysis will predict repository conflicts and application compatibility with future versions before you upgrade. Run this task to understand the impact of an upgrade on your fleet and make a remediation plan before your maintenance window begins.
[Download preview of playbook](#)

Task name
RHEL pre-upgrade analysis utility

Systems to run tasks on
Eligible systems include systems connected to console.redhat.com with rhc, or Satellite with Cloud Connector.

1-10 of 255

Name	Tags	OS	Last seen
iqe-vm-lib-f3ca03d8-calc-4cf6-ad5f-daa9b74875d7	0	RHEL 8.7	Just now
iqe-vm-lib-d7dfcff-2604-4fd5-bfc5-53c3d07970a4	0	RHEL 8.7	2 minutes ago
iqe-vm-lib-ed9a5d99-54a2-4599-8b42-fad89fd8f24b	0	RHEL 8.7	3 minutes ago
iqe-jenkins-tasks-outage-prod	0	RHEL 8.7	18 minutes ago
iqe-prod-test-device-87-2	0	RHEL 8.7	18 minutes ago
test-image-rehana	0	RHEL 9.2	18 minutes ago
iqe-vm-lib-c9738e71-la78-4f4e-896f-3766e75efbf	0	RHEL 8.7	37 minutes ago
ci-vm-10-0-96-150.hosted.upshift.rdu2.redhat.com	0	RHEL 8.8	53 minutes ago

Execute task Cancel

6. Click **Execute task**. The task executes on the selected systems. You might see a pop-up that shows that your task is running.

Task running

Your task "RHEL pre-upgrade analysis utility" is running on 1 system.

[View progress](#)

7. Click **View Progress** to view the task details page which shows how the task is executing on each of your selected systems.

Red Hat Hybrid Cloud Console Services Search for services Preview off

Red Hat Insights > Automation Toolkit > Tasks

RHEL pre-upgrade analysis utility

RHEL pre-upgrade analysis utility

For connected systems running versions of RHEL 7 or RHEL 8, the RHEL pre-upgrade analysis will predict repository conflicts and application compatibility with future versions before you upgrade. Run this task to understand the impact of an upgrade on your fleet and make a remediation plan before your maintenance window begins.

Systems	Run start	Run end	Initiated by	Systems with alerts
1	22 Jan 2024, 20:23 UTC	22 Jan 2024, 20:23 UTC (0 min)	insights-qa	1

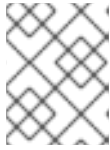
1-1 of 1

System name	Status	Message
iqe-jenkins-tasks-outage-prod	Failure	Alert Task failed to complete for an unknown reason. Retry this task at a later time.

Run task again

8. Review **Status** and **Message** details.
9. If shown, click the **Show more** icon beside the system name to find more information about messages.

10. Click **Tasks** to go to the task detail view to see more information about how the task executed on the selected systems.
11. Click the **Activity tab** to see the status of all the task you have executed. Tasks are in chronological order, by the most recent date and time.



NOTE

A **Completed** status indicates that the task executed, but does not indicate that the task accomplished its goal.

The screenshot shows the Red Hat Hybrid Cloud Console interface. The left sidebar contains navigation options: Red Hat Insights, Dashboard, Inventory, Content, Operations, Security, Business, Automation Toolkit, Remediations, and Tasks. The main content area is titled 'Tasks' and has tabs for 'Available' and 'Activity'. The 'Activity' tab is selected, showing a table of tasks. The table has columns for Task, Systems, Status, and Run date/time. Three tasks are listed, all with a 'Completed' status.

Task	Systems	Status	Run date/time
RHEL pre-upgrade analysis utility	1	Completed	22 Jan 2024, 20:23 UTC
RHEL pre-upgrade analysis utility	1	Completed	22 Jan 2024, 18:29 UTC
Pre-conversion analysis for converting to RHEL	1	Completed	22 Jan 2024, 17:06 UTC

12. Optional: Click the task you executed to return to the task detail view to see more information about how the task executed on the selected systems.

Next Steps

You might need to resolve errors, such as an error that occurs because you need to install a software package on your systems before a task can successfully execute. After you resolve those errors, you can execute the task again on the same systems.

Optional: To execute a task again, click **Run Task** again. The previously selected systems are still selected, and you can also add additional systems, if needed.

CHAPTER 4. USING INSIGHTS TASKS TO HELP YOU CONVERT FROM CENTOS LINUX 7 TO RHEL 7

You can use Red Hat Insights to help you convert from CentOS Linux 7 to RHEL 7.

For more information about using Insights tasks to help convert your systems, see [Converting using Insights](#) in the [Converting from an RPM-based Linux distribution to RHEL](#) documentation .

Additional resources

- **Video:** [Pre-conversion analysis for converting to Red Hat Enterprise Linux](#)
- **Video:** [Convert to Red Hat Enterprise Linux from CentOS7 Linux using Red Hat Insights](#)

Troubleshooting conversion-related Insights tasks

Tasks help you update, manage, or secure your Red Hat Enterprise Linux infrastructure using Insights. Each task is a predefined playbook that executes a task from start to finish. If you have trouble completing some Insights conversion-related tasks, see:

- [Troubleshooting issues with Red Hat Insights conversions](#)

CHAPTER 5. ASSESSING SYSTEM-UPGRADE READINESS WITH THE PRE-UPGRADE ANALYSIS TASK

This task is a component of the in-place upgrade capability for Red Hat Enterprise Linux using the Leapp tool. For more information about the Leapp tool and using it to check upgrade readiness manually, see [Upgrading from RHEL 8 to RHEL 9, Instructions for an in-place upgrade from Red Hat Enterprise Linux 8 to Red Hat Enterprise Linux 9](#).

The pre-upgrade analysis task checks the readiness of systems to upgrade from Red Hat Enterprise Linux (RHEL) 8 to RHEL 9. If Insights detects upgrade-blocking issues, you can see more information about the issues, including steps to resolve them, in Insights for Red Hat Enterprise Linux on the Red Hat Hybrid Cloud Console (Console).

The pre-upgrade analysis task can run on any RHEL 8 system that is connected to Red Hat Insights using the remote host configuration (rhc) solution. You can verify that your system is connected to Insights by locating it in the [Insights system inventory](#) on the Console. If the system is not in the inventory, see [Remote Host Configuration and Management](#) documentation for information about connecting systems to Insights.

You can also run the Leapp utility manually on systems. When an Insights-connected system has a Leapp report in its archive, whether the utility was run manually or as an Insights task, you can see results from the report in Insights.

5.1. REQUIREMENTS AND PREREQUISITES

The following requirements and prerequisites apply to the pre-upgrade analysis task:

- This guide assumes that you have read and understood the [in-place upgrade documentation](#) before attempting to perform any upgrade-related action using Red Hat Insights.
- Your systems must be eligible for in-place upgrade. See in-place upgrade documentation for system requirements and limitations.
- Your RHEL system must be connected to Red Hat Insights using the remote host configuration solution in order to execute Insights tasks and other remediation playbooks from the Insights for Red Hat Enterprise Linux UI.
 - For more information, see [Remote Host Configuration and Management](#) documentation.
- You are logged into the [console.redhat.com](#) with **Tasks administrator** privileges granted in User Access.



NOTE

All members of the **Default admin access group** have **Tasks administrator** access. If you are not a member of a User Access group with this role, you will not see any tasks on the Tasks page. For more information about User Access, including how to request greater access to Insights features, see [User Access Configuration Guide for Role-based Access Control \(RBAC\)](#).

5.2. RUNNING THE PRE-UPGRADE ANALYSIS TASK

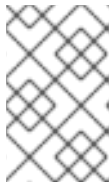
Use the following procedure to analyze the readiness of RHEL systems for upgrading from RHEL 8 to RHEL 9.

Prerequisites

- Prerequisites are listed in the Requirements and prerequisites section of this chapter.

Procedure

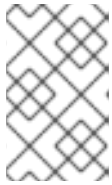
1. Go to the [Red Hat Hybrid Cloud Console > Red Hat Insights > RHEL > Automation Toolkit > Tasks](#).
2. Locate the **Pre-upgrade analysis for in-place upgrade from RHEL 8** task.



NOTE

If you can not see any tasks on the page, you might not have adequate User Access. See [User Access Configuration Guide for Role-based Access Control \(RBAC\)](#) for more information.

3. **Optional:** You can view details of the pre-upgrade analysis utility by clicking **Download preview of playbook**.
4. Click Run task.
5. On the **Pre-upgrade analysis for in-place upgrade from RHEL 8** popup, select systems on which to run the pre-upgrade analysis by checking the box next to each system.



NOTE

By default, the list of systems is filtered to only display systems that are eligible to run the task. You can change or add filters to expand the parameters of included systems from your inventory.

6. Click **Execute task** to run the task on the selected systems.

Verification

Use the following procedure to verify that a task has been executed successfully.

1. Go to the [Red Hat Hybrid Cloud Console > Red Hat Insights > RHEL > Automation Toolkit > Tasks](#) page and click the **Activity** tab. The status of tasks, whether they are in progress or have been completed, can be viewed here.
2. Locate your task based on the run date and time. You can see whether the task completed or failed.

Tasks ⓘ

Available Activity

Task	Systems	Status	Run date/time
Pre-upgrade analysis for in-place upgrade from RHEL 8	26	Completed	12 Mar 2024, 14:50 UTC
Pre-upgrade analysis for in-place upgrade from RHEL 8	1	Completed	08 Mar 2024, 17:22 UTC
Convert to RHEL from CentOS Linux 7	2	Completed	29 Jan 2024, 18:18 UTC
Pre-conversion analysis for converting to RHEL	2	Completed	29 Jan 2024, 17:50 UTC

5.3. REVIEWING THE PRE-UPGRADE ANALYSIS TASK REPORT

After executing the pre-upgrade analysis task on systems, you can review specific details and upgrade-inhibiting recommendations for each system.

Prerequisites

- Prerequisites are listed in the Requirements and prerequisites section of this chapter.

Procedure

- Go to the [Red Hat Hybrid Cloud Console > Red Hat Insights > RHEL > Automation Toolkit > Tasks](#) and click the **Activity** tab.
- Click on the task name to view the results of a task. Note the run date and time so that you select the correct report.
- Click on the carat next to the system name to view a list of alerts for that system.

ip-172-31-28-143.eu-central-1.compute.internal Success Your system has 0 inhibitors out of 9 potential problems.

- Remote root logins globally allowed using password
- GRUB core will be updated during upgrade
- Usage of deprecated Model "RequiredTargetUserspacePackages" at /etc/leapp/repos.d/system_upgrade/common/actors/cloud/checkrhui/actor.py:123
- SELinux will be set to permissive mode
- The subscription-manager release is going to be kept as it is during the upgrade
- Excluded target system repositories
- The upgrade will prepend the Include directive to OpenSSH sshd_config
- SELinux relabeling will be scheduled
- Release version in /etc/dnf/vars/releasever will be set to the current target release

- View information about upgrade-inhibiting alerts by clicking on the carat next to an alert with a white exclamation mark inside of a red dot, accompanying red alert text.



NOTE

In addition to the inhibitor alerts, you might also see lower severity and informative alerts that do not require remediation in order for the upgrade to proceed.

5. Review the report thoroughly. While some recommendations may be informational, it is crucial to take action if you encounter any errors or warnings. In the event of such issues, address them on your systems and re-run the pre-upgrade task to assess the impact of your remediation efforts.

**NOTE**

Certain errors are classified as official inhibitors, and proceeding with the upgrade is not possible until these are remediated.

5.4. VIEWING UPGRADE-INHIBITING RECOMMENDATIONS

After running the pre-upgrade analysis task, or manually running the Leapp tool on individual systems, you can view a list of recommendations for upgrade-inhibiting issues in your infrastructure.

Using the list of pre-upgrade recommendations, you can view the following information about each recommendation:

- Recommendation details
- Affected-system information
- Total risk and impact insights
- Risk to system availability during resolution actions

Prerequisites

- Any user with default access (the default for every user) can view the list of in-place upgrade recommendations.

Procedure

1. Go to [Red Hat Insights > Operations > Advisor > Topics > In-place upgrade](#) to view recommendations affecting the success of in-place upgrades.

**NOTE**

Currently, the in-place upgrade recommendations list only shows recommendations that Insights has identified as upgrade inhibitors. All in-place upgrade recommendations, including non-inhibitors, can be seen in the detailed view of each executed task.

5.5. REMEDIATING UPGRADE-INHIBITING RECOMMENDATIONS

You can use the in-place upgrade recommendations list as a basis for remediating upgrade-inhibiting issues on systems in your infrastructure.

Some recommendations have a playbook available for automating the execution of remediations directly from the Insights for Red Hat Enterprise Linux UI. However, some recommendations require manual resolutions, the steps of which are customized for the system and recommendation pair, and are provided with the recommendation. You can tell which recommendations have playbooks available by viewing the Remediation column in the list of recommendations.

For more information about Insights remediations, see the [Red Hat Insights Remediations Guide](#).

5.5.1. Using Insights remediation playbooks to resolve RHEL upgrade-inhibiting recommendations

You can automate the remediation of upgrade-inhibiting recommendations using Ansible Playbooks that you create in Insights. Use the following procedure to locate your inhibitor issues and select recommendations and systems to remediate.

Prerequisites

- Prerequisites are listed in the Requirements and prerequisites section of this chapter.

Procedure

- Go to [Red Hat Insights > Operations > Advisor > Topics > In-place upgrade](#) to view recommendations affecting the success of in-place upgrades.
- Choose a recommendation with the word "Playbook" in the **Remediation** tab, which indicates issues that have a playbook available.

[Topics](#) > [In-place upgrade](#)

In-place upgrade ★ Featured

Follow these recommendations to address inhibitors produced during the in-place upgrade process.

Name	Modified	Category	Total risk	Systems	Remediation
> Minimum memory requirements for target RHEL system are not met	9 months ago	Availability	Moderate	2	Manual
> Missing required answers in the answer file	9 months ago	Availability	Moderate	1	Manual
> Newest installed kernel not in use	9 months ago	Availability	Moderate	1	Playbook
> Possible problems with remote login using root account	9 months ago	Availability	Moderate	1	Manual
> The installed OS version is not supported for the in-place upgrade to the target RHEL version	9 months ago	Availability	Moderate	1	Manual
> RHEL 7 system is eligible for an in-place upgrade to RHEL 8 using the Leapp utility	8 months ago	Performance	Low	2	Manual
> RHEL 8 system is eligible for an in-place upgrade to RHEL 9 leveraging the already installed Leapp utility	7 months ago	Performance	Low	4	Manual

- For each recommendation *with an available playbook*, take the following actions:
 - Click on the recommendation to see more information about the issue, including the systems that are affected.
 - Check the box next to each system you want to add to the playbook and click **Remediate**.

Recommendations > Newest installed kernel not in use

Newest installed kernel not in use

Modified date: 19 Jun 2023 [Availability](#)

Newest installed kernel not in use

To ensure a stable upgrade, the machine needs to be booted into the latest installed kernel. Boot into the most up-to-date kernel installed on the machine before running `leapp` again.

Topics related to this recommendation
[In-place upgrade](#)

Is this recommendation helpful?

Total risk
 Moderate

Low likelihood High impact

Risk of change
 Moderate The risk of change is moderate, because the change will likely require an outage window.

System reboot is required.

1 Total Systems

Conventional (RPM-DNF) Immutable (OSTree)

Name Filter by name [Remediate](#) 1-1 of 1 < >

Name ↓	Group ↑	Tags	OS ↑	Last seen ↓	First Impacted ↑
<input checked="" type="checkbox"/> dur-rhc01.hcc-lab.com	No group	0	RHEL 8.8	1 hour ago	12 days ago

- c. In the popup, select **Create a new playbook** and enter a name for the playbook, then click **Next**.
- d. **Optional:** Alternatively, you can add the resolution for the selected systems to an existing playbook.
- e. Review the included systems and click **Next**.
- f. Review the included recommendation. You can click the carat next to the recommendation name to see included systems.



IMPORTANT

Some resolutions require the system to reboot. Auto reboot is not enabled by default but you can enable it by clicking **Turn on autoreboot** above the list of recommendations.

- g. Click **Submit**. The final popup view confirms that the playbook was created successfully. You can select to return to the application or open the playbook.
4. Find the playbook in [Automation Toolkit > Remediations](#) and click on it to open it.
5. The playbook includes a list of actions. Select the actions to execute by checking the box next to each one.
6. Click **Execute playbook** to run the playbook on the specified systems.
7. On the popup, click on the **Execute playbook on systems** button. The playbook runs on those systems.

5.5.2. Remediating RHEL upgrade-inhibiting recommendations manually

You can remediate upgrade-inhibiting recommendations by manually applying resolution steps on affected systems. The following procedure shows how to find the resolution steps for a system and recommendation pairing.

Prerequisites

- Prerequisites are listed in the Requirements and prerequisites section of this chapter.

Procedure

- Go to [Red Hat Insights > Operations > Advisor > Topics > In-place upgrade](#) to view recommendations affecting the success of in-place upgrades.
- Choose a recommendation with the word "Manual" in the ***Remediation** tab, which indicates that the issue requires manual remediation.

Topics > In-place upgrade

In-place upgrade ★ Featured

Follow these recommendations to address inhibitors produced during the in-place upgrade process.

Recommendations						
> Name Filter by name <input type="text"/> <input type="button" value="Q"/> <input type="button" value="🔍"/> 1 - 7 of 7 < >						
Status Enabled X Reset filters						
Name	Modified	Category	Total risk	Systems	Remediation	
> Minimum memory requirements for target RHEL system are not met	9 months ago	Availability	Moderate	2	Manual	⋮
> Missing required answers in the answer file	9 months ago	Availability	Moderate	1	Manual	⋮
> Newest installed kernel not in use	9 months ago	Availability	Moderate	1	Playbook	⋮
> Possible problems with remote login using root account	9 months ago	Availability	Moderate	1	Manual	⋮
> The installed OS version is not supported for the in-place upgrade to the target RHEL version	9 months ago	Availability	Moderate	1	Manual	⋮
> RHEL 7 system is eligible for an in-place upgrade to RHEL 8 using the Leapp utility	8 months ago	Performance	Low	2	Manual	⋮
> RHEL 8 system is eligible for an in-place upgrade to RHEL 9 leveraging the already installed Leapp utility	7 months ago	Performance	Low	5	Manual	⋮

- For each recommendation requiring a manual remediation, take the following actions:

- Click on the recommendation to open the recommendation-details page, which shows affected systems.

Recommendations > RHEL 8 system is eligible for an in-place upgrade to RHEL 9 leveraging the already installed Leapp utility

RHEL 8 system is eligible for an in-place upgrade to RHEL 9 leveraging the already installed Leapp utility

Modified date: 11 Aug 2023 [Performance](#)

Red Hat provides [Leapp utility](#) to support upgrade from **RHEL 8** to **RHEL 9**. The current **RHEL 8** version is eligible for upgrade to **RHEL 9** via [Leapp utility](#).

Run [RHEL preupgrade analysis utility](#) in *Automation Toolkit* -> *Tasks* service to understand the impact of an upgrade on your fleet and make a remediation plan before your maintenance window begins.

[Knowledgebase article](#)

Topics related to this recommendation
In-place upgrade

Is this recommendation helpful?

Actions

Total risk

Low

Low likelihood

Low impact

Risk of change

Moderate The risk of change is **moderate**, because the change will likely require an outage window.

🔴 System reboot is required.

5 Total Systems						
Conventional (RPM-DNF) Immutable (OSTree)						
<input type="checkbox"/> Name Filter by name <input type="text"/> <input type="button" value="Q"/> <input type="button" value="Remediate"/> <input type="button" value="🔍"/> 1 - 5 of 5 < >						
Name	Group	Tags	OS	Last seen	First Impacted	
<input type="checkbox"/> dur-postgres01	No group	2	RHEL 8.9	12 minutes ago	6 days ago	⋮
<input type="checkbox"/> ip-172-31-89-119.ec2.internal	postgres	2	RHEL 8.9	14 minutes ago	6 days ago	⋮
<input type="checkbox"/> dur-rhc10.hcc-lab.com	No group	0	RHEL 8.6	3 hours ago	5 months ago	⋮
<input type="checkbox"/> dur-rhc07.hcc-lab.com	No group	0	RHEL 8.6	4 hours ago	5 months ago	⋮
<input type="checkbox"/> dur-rhc08.hcc-lab.com	No group	1	RHEL 8.6	5 hours ago	8 months ago	⋮

- Click on a system name.
- Pick a recommendation to resolve manually and click on the carat to view the **Steps to resolve** the recommendation on the system.

- d. Perform the resolution steps on the system.
- e. Repeat steps b, c, and d for each affected system.

CHAPTER 6. USING INSIGHTS TASKS TO UPDATE IMAGE-MODE RHEL SYSTEMS

While building systems using image mode for RHEL, you can connect your systems to Red Hat Insights. Once connected, use the Red Hat Insights task, **Initiate an update of your image mode RHEL host** to update your Insights-connected systems to the latest versions of RHEL. Red Hat Enterprise Linux Version 9.4 and later includes image mode for RHEL.



NOTE

Image mode for RHEL uses the terms *update* and *upgrade* interchangeably.

Additional Resources

- [Using image mode for RHEL to build, deploy, and manage operating systems Red Hat Enterprise Linux 9.](#)

6.1. RUNNING THE INITIATE UPDATE FOR IMAGE MODE RHEL FOR RHEL HOST TASK

You can initiate an upgrade for image-mode RHEL systems using Insights tasks. You might run the **Initiate Update for image mode for RHEL host** task if you have a large number of image-mode RHEL systems to update. Or, you might run the task if you want to avoid updating systems using the automatic upgrades option.

Running the task does the following:

- Checks the container repository for a new container image.
- Downloads the image and extracts content for use on next boot.
- If updated content is available, reboots the host to pull in new image content.
- Provides results about whether the image was updated.



NOTE

The image mode for RHEL update is sometimes referred to as a **bootc** update.



IMPORTANT

Image mode for RHEL is a Technology Preview feature only. Technology Preview features are not supported with Red Hat production service level agreements (SLAs) and might not be functionally complete. Red Hat does not recommend using them in production. These features provide early access to upcoming product features, enabling customers to test functionality and provide feedback during the development process.

For more information about the support scope of Red Hat Technology Preview features, see [Technology Preview Features Support Scope](#).

Prerequisites

- You are logged in to the Red Hat Hybrid Cloud Console.


- You are a member of a User Access group that has the **Tasks administrator** role.
- You have Insights-connected systems, and have addressed dependencies for one of the following:
 - remote host configuration (RHC), **rhc-worker-playbook** and **ansible-core**.
 - Satellite 6.11+. See [Enabling host communication with Insights](#) in the *Red Hat Insights Remediations Guide*.
- You have built image-mode RHEL systems using the **bootc** image builder, and you can identify those systems. (For more information about image mode for RHEL using RHEL bootable container images on Red Hat Enterprise Linux 9.4 or later, see [Using image mode for RHEL to build, deploy, and manage operating systems Red Hat Enterprise Linux 9](#).)

Procedure

1. Go to [Automation Toolkit > Tasks](#), and log in to the Red Hat Hybrid Cloud Console, if needed. The **Available** tab (the default view) shows you a list of tasks available for you to run. Click the *Activity* tab to show the history of all the tasks run on your account.
2. Find the **Initiate Update for image mode for RHEL host** task.

▼ **Initiate update of image mode for RHEL host**

Use this Insights task to initiate an update of your image mode hosts. Hosts will check their container repository for a new container image, upgrade themselves to that image, and perform the bootc upgrade function to convert the bootc image into an updated RHEL operating system. Once updated, you will be able to view the new image associated with your hosts in Insights inventory.

[Download preview of playbook](#) 

[Select systems](#)

3. Click **Select systems**.
4. Select the systems on which to run the task. You can use filters to search and filter systems by **Name, Operating System, Group, Tags, and Task Eligibility** (the default filter shows systems registered via RHC).



NOTE

The filter does not filter for image mode for RHEL (or **bootc**) systems. You can filter systems running 9.4 or later to create a better list of systems on which to run the task. If needed, click the system name to find out if there is a system fact with **bootc** information.

In this example, one system is selected.

Initiate update of image mode for RHEL host ✕

Only eligible systems are shown
Eligible systems for this task include RHEL systems that are registered via RHC

Systems to run tasks on

1 selected Task Eligibility Filter Eligible Syste... 1 - 10 of 24

Task eligibility Eligible Systems ✕ Reset filters

Name	Eligibility	Group	Tags	OS	Last seen
<input type="checkbox"/> rhel8-vm	Eligible	No group	0	RHEL 8.8	28 minutes ago
<input type="checkbox"/> ip-10-31-62-205.us-east-1.aws.redhat.com	Eligible	No group	0	RHEL 7.9	2 hours ago
<input type="checkbox"/> mhuth-laptop	Eligible	No group	0	RHEL 9.4	6 hours ago
<input checked="" type="checkbox"/> ci-vm-10-0-138-95.hosted.upshift.rdu2.redhat.com	Eligible	No group	0	RHEL 9.4	11 hours ago



IMPORTANT

Completing the next step results in a reboot of your selected systems. In addition, if you need to roll back your systems to the previous state, see [Chapter 5. Managing RHEL bootable images Red Hat Enterprise Linux 9](#) in *Using image mode for RHEL to build, deploy, and manage operating systems*.

1. Click **Run Task**. A pop-up alerts you that the task is running.

Initiate update of image mode for RHEL host

Only eligible systems are shown

Eligible systems for this task include RHEL systems that are registered via RHC

Systems to run tasks on

1 selected Task Eligibility Filter Eligible Systeme... 1 - 10 of 24

Task eligibility Eligible Systems x Reset filters

Name	Eligibility	Group	Tags	OS	Last seen
<input type="checkbox"/> rhel8-vm	Eligible	No group	0	RHEL 8.8	28 minutes ago
<input type="checkbox"/> ip-10-31-62-205.us-east-1.aws.redhat.com	Eligible	No group	0	RHEL 7.9	2 hours ago
<input type="checkbox"/> mhuth-laptop	Eligible	No group	0	RHEL 9.4	6 hours ago
<input checked="" type="checkbox"/> ci-vm-10-0-138-95.hosted.upshift.rdu2.redhat.com	Eligible	No group	0	RHEL 9.4	11 hours ago
<input type="checkbox"/> iqe-jenkins-tasks-rhel-89-stage-proxy	Eligible	No group	0	RHEL 8.9	11 hours ago
<input type="checkbox"/> ci-vm-10-0-133-82.hosted.upshift.rdu2.redhat.com	Eligible	No group	0	RHEL 9.4	17 hours ago
<input type="checkbox"/> iqe-vm-lib-b5a3lac8-9fc1-4bf5-8766-97da748a7264	Eligible	No group	0	RHEL 8.7	17 hours ago
<input type="checkbox"/> ci-vm-10-0-133-110.hosted.upshift.rdu2.redhat.com	Eligible	No group	0	RHEL 9.4	17 hours ago
<input type="checkbox"/> iqe-vm-lib-fd1bd8db-2298-4f73-a517-104505c48966	Eligible	No group	0	RHEL 8.7	17 hours ago
<input type="checkbox"/> iqe-vm-lib-9713560d-0e2d-4f01-8786-bda76822cb82	Eligible	No group	0	RHEL 8.7	2 days ago

1 - 10 of 24 items 1 of 3

Run task Cancel

- Review the information in the **Status** and **Message** fields on the **Activity** page. For this example, the message is **Bootc upgrade complete. Expand for details.**

Filter by tags

Tasks > Initiate update of image mode for RHEL host

Initiate update of image mode for RHEL host

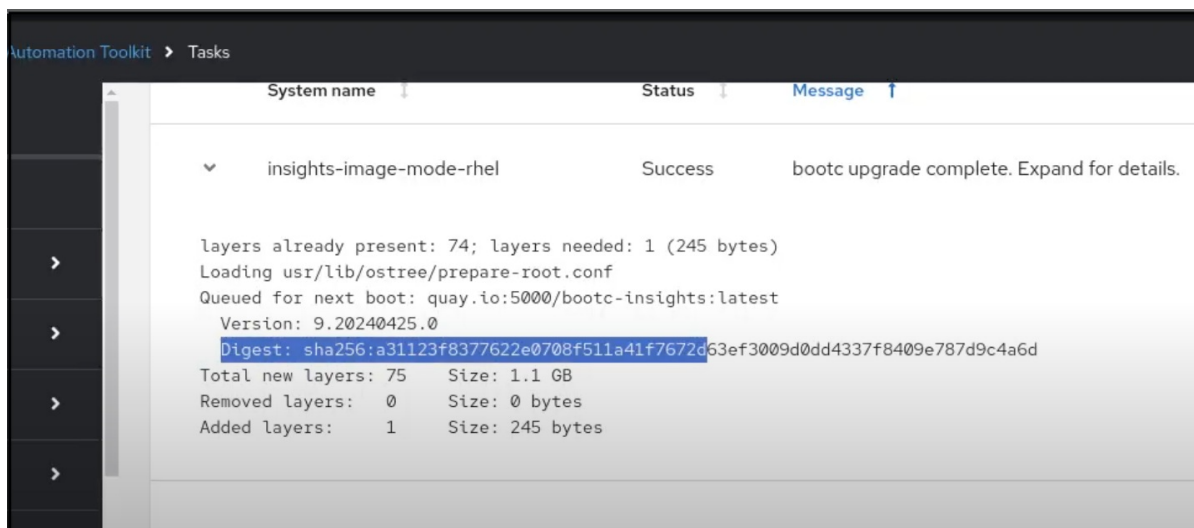
Use this Insights task to initiate an update of your image mode hosts. Hosts will check their container repository for a new container image, upgrade themselves to that image, and perform the bootc upgrade function to convert the bootc image into an updated RHEL operating system. Once updated, you will be able to view the new image associated with your hosts in Insights inventory.

Systems	Run start	Run end	Initiated by	Systems with alerts
1	10 Jun 2024, 21:29 UTC	10 Jun 2024, 21:30 UTC (1 min)	insights-qa	-

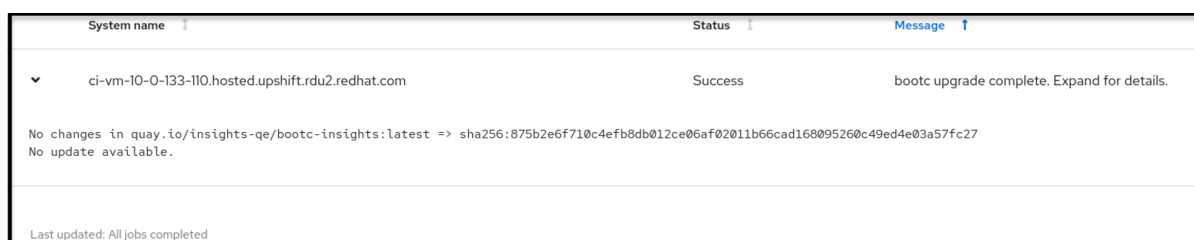
Filter by name

System name	Status	Message
ci-vm-10-0-133-110.hosted.upshift.rdu2.redhat.com	Success	bootc upgrade complete. Expand for details.

- Click the drop-down arrow next to the system name to get more details about the task. You will see more details about the task results, such as the image hash.



Running the task might result in no updates because the system is already up to date.



Troubleshooting

To resolve issues with the task, you can find the answers to some common issues within documentation for other tasks. Red Hat Insights tasks use a common framework of tools, language, and resources within the service. If you have trouble completing this task,

- Try running the task again.
 - If the task failed, go to the Task details page and click **Run task again**.
- Review [Troubleshooting issues with Red Hat Insights conversions](#) to find information about how to resolve issues that have similar error messages.

PROVIDING FEEDBACK ON RED HAT DOCUMENTATION

We appreciate and prioritize your feedback regarding our documentation. Provide as much detail as possible, so that your request can be quickly addressed.

Prerequisites

- You are logged in to the Red Hat Customer Portal.

Procedure

To provide feedback, perform the following steps:

1. Click the following link: [Create Issue](#)
2. Describe the issue or enhancement in the **Summary** text box.
3. Provide details about the issue or requested enhancement in the **Description** text box.
4. Type your name in the **Reporter** text box.
5. Click the **Create** button.

This action creates a documentation ticket and routes it to the appropriate documentation team. Thank you for taking the time to provide feedback.