



Red Hat Insights 1-latest

Red Hat Insights Remediations Guide

Fixing issues on RHEL systems with remediation playbooks

Red Hat Insights 1-latest Red Hat Insights Remediations Guide

Fixing issues on RHEL systems with remediation playbooks

Legal Notice

Copyright © 2024 Red Hat, Inc.

The text of and illustrations in this document are licensed by Red Hat under a Creative Commons Attribution–Share Alike 3.0 Unported license ("CC-BY-SA"). An explanation of CC-BY-SA is available at

<http://creativecommons.org/licenses/by-sa/3.0/>

. In accordance with CC-BY-SA, if you distribute this document or an adaptation of it, you must provide the URL for the original version.

Red Hat, as the licensor of this document, waives the right to enforce, and agrees not to assert, Section 4d of CC-BY-SA to the fullest extent permitted by applicable law.

Red Hat, Red Hat Enterprise Linux, the Shadowman logo, the Red Hat logo, JBoss, OpenShift, Fedora, the Infinity logo, and RHCE are trademarks of Red Hat, Inc., registered in the United States and other countries.

Linux[®] is the registered trademark of Linus Torvalds in the United States and other countries.

Java[®] is a registered trademark of Oracle and/or its affiliates.

XFS[®] is a trademark of Silicon Graphics International Corp. or its subsidiaries in the United States and/or other countries.

MySQL[®] is a registered trademark of MySQL AB in the United States, the European Union and other countries.

Node.js[®] is an official trademark of Joyent. Red Hat is not formally related to or endorsed by the official Joyent Node.js open source or commercial project.

The OpenStack[®] Word Mark and OpenStack logo are either registered trademarks/service marks or trademarks/service marks of the OpenStack Foundation, in the United States and other countries and are used with the OpenStack Foundation's permission. We are not affiliated with, endorsed or sponsored by the OpenStack Foundation, or the OpenStack community.

All other trademarks are the property of their respective owners.

Abstract

Create and execute playbooks to remediate issues on any system registered with Insights. 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 .

Table of Contents

CHAPTER 1. REMEDIATIONS OVERVIEW	3
1.1. USER ACCESS CONSIDERATIONS	3
1.1.1. User Access roles for remediations users	4
CHAPTER 2. ENABLING HOST COMMUNICATION WITH INSIGHTS	5
2.1. ENABLING THE RHC CLIENT ON SYSTEMS DIRECTLY MANAGED BY INSIGHTS	5
2.2. ENABLING CLOUD CONNECTOR ON HOSTS MANAGED BY SATELLITE	6
2.2.1. Uploading your host inventory from Satellite to Insights	6
2.2.2. Installing the Insights client on hosts managed by Satellite	7
2.2.3. Configuring Cloud Connector on Satellite Server	8
2.2.3.1. Creating the Cloud Connector configuration playbook	8
2.2.3.2. Enabling Cloud Connector operation on Satellite	8
2.2.3.3. Verifying Satellite and Insights communication	8
2.2.3.4. Enabling Auto Sync and perform initial manual sync	8
2.2.3.5. Disabling direct remediations on a host	9
2.2.3.6. Disabling direct remediation on a host group	9
2.2.3.7. Configuring inventory uploads	10
2.2.3.8. Verifying successful configuration	10
2.2.4. Configuring Cloud Connector after upgrading Satellite Server 6.10 to 6.11	10
2.2.5. Configuring Insights recommendations on Satellite	10
CHAPTER 3. CREATING AND MANAGING REMEDIATION PLAYBOOKS IN INSIGHTS	11
3.1. CREATING A PLAYBOOK TO REMEDIATE A CVE VULNERABILITY ON RHEL SYSTEMS	11
3.1.1. Creating playbooks to remediate CVEs with security rules when recommended and alternate resolution options exist	12
3.2. MANAGING REMEDIATION PLAYBOOKS IN INSIGHTS FOR RED HAT ENTERPRISE LINUX	16
3.2.1. Downloading a remediation playbook	16
3.2.2. Archiving a remediation playbook	16
3.2.3. Viewing archived remediation playbooks	16
3.2.4. Deleting a remediation playbook	17
3.2.5. Monitoring remediation status	17
CHAPTER 4. EXECUTING REMEDIATION PLAYBOOKS	18
4.1. EXECUTING REMEDIATION PLAYBOOKS FROM THE INSIGHTS USER INTERFACE	18
4.2. EXECUTING REMEDIATIONS FROM THE SATELLITE USER INTERFACE	18
CHAPTER 5. USING PATCH TEMPLATES FOR REMEDIATIONS	20
5.1. USING PATCH TEMPLATES WITH REMEDIATIONS	20
PROVIDING FEEDBACK ON RED HAT DOCUMENTATION	21

CHAPTER 1. REMEDIATIONS OVERVIEW

After identifying the highest remediation priorities in your Red Hat Enterprise Linux (RHEL) infrastructure, you can create, and then execute, remediation playbooks to fix those issues.

Subscription requirements

- Red Hat Insights for Red Hat Enterprise Linux is included with every RHEL subscription. No additional subscriptions are required to use Insights remediation features.

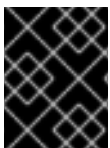
User requirements

- Access remediation capabilities in the Insights for Red Hat Enterprise Linux application on the Red Hat Hybrid Cloud Console (Hybrid Cloud Console).
- Access Red Hat Satellite-managed systems in the Console or in the Satellite application UI.
- All Insights users will automatically have access to read, create, and manage remediation playbooks.
- The ability to execute playbooks on remote systems requires the **Remediations administrator** predefined User Access role, granted by an Organization Administrator in Identity & Access Management settings on the Hybrid Cloud Console.

1.1. USER ACCESS CONSIDERATIONS

An Organization Administrator on your account configures settings in User Access to control access to Red Hat Insights for Red Hat Enterprise Linux features. All users on your account have access to most of the data in Insights for Red Hat Enterprise Linux. However, performing some actions requires users to have elevated access.

Access is granted in User Access in the [Red Hat Hybrid Cloud Console](#). To grant or change access, an Organization Administrator or User Access administrator must add you to a User Access group with the required roles in [Red Hat Hybrid Cloud Console > the Settings icon \(⚙\) > Identity & Access Management > User Access > Users](#).



IMPORTANT

In this documentation, prerequisites for procedures declare whether you need elevated access to perform the procedure.

Important predefined groups and roles relevant to understanding User Access are:

- **Default access group**
- **Default admin access group**
- **Organization Administrator role**

Brief overview about some predefined groups and roles

The following predefined groups and roles are relevant to access:

- **Default access group.** All users on the account are members of the Default access group. Members of the Default access group have read-only access, which allows you to view most information in Insights for Red Hat Enterprise Linux.
- **Default admin access group.** All users on the account who are Organization Administrators are members of this group. Users cannot modify the roles in the Red Hat-managed Default admin access group. Members of the Default admin access group have read-write access, which allows you to view and perform other actions in Insights for Red Hat Enterprise Linux.
- **Organization Administrator role.** All users on the account who are Organization Administrators can create and modify User Access groups and grant access to other account users. To find out whether you are an Organization Administrator, click your name in the Red Hat Hybrid Cloud Console header, in the upper right of your screen, and see whether the words “Org. Administrator” show under your username.



IMPORTANT

Requesting elevated access If you do not have access to features that you need, you can:

- Contact [Customer Service](#) to get Organization Administrator details for your account.
 - Provide your account number when you send the request.
- Contact the Organization Administrator and ask for access, providing the following information:
 - The name of the role you need access to, for example, Remediations administrator
 - A link to [full User Access documentation](#), to help inform the Organization Administrator about how to give you access.

1.1.1. User Access roles for remediations users

The following roles enable standard or enhanced access to remediations features in Insights for Red Hat Enterprise Linux:

- **Remediations viewer.** The Remediations viewer role is included in the Default access group. The Remediation viewer role permits access to view existing playbooks for the account and to create new playbooks. Remediations viewers cannot execute playbooks on systems.
- **Remediations administrator.** The Remediations administrator role permits access to all remediations capabilities, including remotely executing playbooks on systems.

CHAPTER 2. ENABLING HOST COMMUNICATION WITH INSIGHTS

Before you can execute playbooks on remote systems from Red Hat Insights for Red Hat Enterprise Linux, your systems have to be able to communicate with Red Hat Insights.

- For Red Hat Enterprise Linux systems that are *not managed by Red Hat Satellite*, you should follow the procedure below to enable the `rhc` client on those systems.
- For systems that *are managed by Satellite*, you will configure Cloud Connector on the host servers for those systems. :context: host-communication-with-insights

2.1. ENABLING THE RHC CLIENT ON SYSTEMS DIRECTLY MANAGED BY INSIGHTS

To be able to execute remediation playbooks from Insights for Red Hat Enterprise Linux, the `rhc` client must be enabled on the systems in your infrastructure. The **`rhc connect`** command does this by registering (RHEL8.6 and later, and 9.0 and later) systems with Red Hat Subscription Manager and Red Hat Insights, and enabling remote host configuration (`rhc`) features in Insights for Red Hat Enterprise Linux.

Prerequisites

- Sudo access on the Red Hat Enterprise Linux host system

Connect `rhc` on RHEL8.5 systems

Remote host configuration on RHEL 8.5 has dependencies of **`ansible`** and **`rhc-worker-playbook`**. To install the dependencies, you must first register with Subscription Manager.

- Use the following commands to enable `rhc` on RHEL 8.5 systems.

```
[root]# subscription-manager repos --enable ansible-2.9-for-rhel-8-x86_64-rpms
[root]# dnf -y install ansible rhc-worker-playbook-0.1.5-3.el8_4
[root]# rhc connect
```

Connect `rhc` on RHEL8.6 and later systems

- Use the following commands to enable `rhc` on RHEL8.6 and later systems.

```
[root]# dnf -y update rhc
[root]# dnf -y install rhc-worker-playbook
[root]# rhc connect
```

Connect `rhc` on RHEL9.0 and later systems

- Use the following commands to enable `rhc` on RHEL9.0 and later systems.

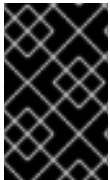
```
[root]# dnf -y install rhc rhc-worker-playbook
[root]# rhc connect
```

Additional resources

- After enabling rhc, you can manage the configuration at [Red Hat Hybrid Cloud Console > Red Hat Insights > Inventory > System Configuration > Remote Host Configuration \(RHC\)](#).
- For complete rhc documentation, see [Remote Host Configuration and Management](#).

2.2. ENABLING CLOUD CONNECTOR ON HOSTS MANAGED BY SATELLITE

Before you can remediate issues in your Satellite infrastructure, you must connect your hosts to Insights for Red Hat Enterprise Linux and configure Cloud Connector on Satellite Server.



IMPORTANT

If you want to manage and execute host remediations completely from Satellite, then you do not need to enable Cloud Connector. Cloud Connector enables the remediation of Satellite-managed hosts *remotely*, from Insights for Red Hat Enterprise Linux.

The following prerequisites are comprehensive for Satellite configuration:

Prerequisites

- Satellite must be version 6.9 or later.
- Import a Subscription Manifest into Satellite. Only hosts in organizations with a valid Red Hat certificate can be connected to [Red Hat Hybrid Cloud Console](#). For more information, see [Importing a Subscription Manifest into Satellite Server](#) in the Red Hat Satellite *Content Management Guide*.
- Register your hosts to Satellite using an activation key to attach Red Hat subscriptions. For more information, see [Registering Hosts](#) in the Red Hat Satellite *Managing Hosts* guide.
- Enable remote execution on your hosts so that Satellite can run remediation playbooks on them. For more information, see [Distributing SSH Keys for Remote Execution](#) in the Red Hat Satellite *Managing Hosts* guide.
- Ensure **Enable auto upload** is checked on the **Configure > Inventory upload** page.
- Ensure that **Sync automatically** is checked on the **Configure > Insights** page.



NOTE

This step also shows recommendation counts on Satellite's hosts list page and the recommendations tab on the host details page.

2.2.1. Uploading your host inventory from Satellite to Insights

Use this procedure to upload your host inventory from Red Hat Satellite to Red Hat Insights for Red Hat Enterprise Linux.

Prerequisites

- Register your hosts to Satellite using an activation key to attach Red Hat subscriptions.
- You have root access to the Satellite service.

Procedure

1. On Satellite Server, enable the remote-execution plugin by entering one of the following commands, based on your version of Satellite Server.

- a. **On Satellite Server 6.12 and newer**

```
[root]# satellite-installer --foreman-proxy-plugin-remote-execution-script-install-key true
```

- b. **On Satellite Server 6.9 - 6.11**

```
[root]# satellite-installer --foreman-proxy-plugin-remote-execution-ssh-install-key true
```

2. In the Satellite web UI, navigate to **Configure > Inventory Upload**. The **Automatic Inventory Upload** switch is **ON** by default.
3. Click **Configure Cloud Connector**. A Notice dialog box warns you that your inventory will be automatically uploaded. Click **Confirm**.
4. Navigate to **Configure > Inventory Upload** and select your organization.
5. Click **Restart** to upload your host inventory to Red Hat Insights for Red Hat Enterprise Linux. Repeat this step for each organization from which you want to upload a host inventory.
6. **Optional:** Toggle the **Obfuscate host names** switch to the **ON** position to hide host names that Satellite reports to the Red Hat Hybrid Cloud Console. The *Obfuscate host names* setting only affects *rh_cloud* reports. If you want to obfuscate hostnames and IP addresses, you should set obfuscation in the **insights-client** configuration. Satellite knows how to read this configuration, and will follow along.
Auto upload and **Obfuscate host names** are global settings. They affect hosts that belong to all organizations.

Verification

To verify that the upload was successful, log into [Red Hat Hybrid Cloud Console > Red Hat Enterprise Linux > Red Hat Insights > Inventory](#) and search for the `satellite_id` tag for your hosts.

Optionally, push the **Sync inventory status** button and wait for the task to finish. It will show you the amounts of Satellite hosts recognized also on the cloud side.

2.2.2. Installing the Insights client on hosts managed by Satellite

The Insights client comes preinstalled on most versions of Red Hat Enterprise Linux; however, if you have to install it, use this procedure to install the Insights client on each system.

Prerequisites

- Register your hosts to Satellite
If you already have Red Hat Enterprise Linux hosts, you can use the [Global Registration Template](#) to register them to Satellite. For more information, see [Registering hosts to Satellite](#).

Procedure

1. Install the Insights for Red Hat Enterprise Linux client:

```
# yum install insights-client
```

2. Register the host to Insights for Red Hat Enterprise Linux:

```
# insights-client --register
```

3. Repeat these steps on each host.

Alternatively, you can use the **RedHatInsights.insights-client** Ansible role to install the Insights client and register the hosts. For more information, see [Using Red Hat Insights with Hosts in Satellite](#) in the Red Hat Satellite *Managing Hosts* guide.

2.2.3. Configuring Cloud Connector on Satellite Server

Before you can remotely run remediation playbooks on your Satellite-managed infrastructure, you must install and configure the Cloud Connector on Satellite Server. Perform the following tasks to install, configure, and verify the configuration of Cloud Connector.

2.2.3.1. Creating the Cloud Connector configuration playbook

A Satellite administrator can install and configure the Cloud Connector by activating the **Configure Cloud Connector** button. This automatically creates the service user that the Cloud Connector will use to trigger remediation jobs on Satellite, then runs the Cloud Connector installation playbook using the service-user credentials.

2.2.3.2. Enabling Cloud Connector operation on Satellite

To ensure that the Cloud Connector operates, verify that **Automatic Inventory Upload** (Configure > Inventory Upload) and **Sync Automatically** (Configure > Insights) are turned **ON**.

For more information about running remediations from Satellite, see section, [Creating an Insights Plan for Hosts](#), in *Managing Hosts Red Hat Satellite 6.12*.

2.2.3.3. Verifying Satellite and Insights communication

Perform these tasks manually to verify the system functions. Refer to the following steps:

- **By uploading the report:**Select the required organization from the inventory page, and click **Restart**. This step is asynchronous and it might take time process in the cloud.
- **By syncing Insights information:**Select the three dots menu from the Insights page, and click **Sync Recommendations**.
- **Optionally, verify the status of the new source record:**The source record would look similar to **Satellite <UUID> organization <org_name>** under [Red Hat Hybrid Cloud Console > the Settings icon \(⚙\) > Settings > Integrations](#). The source should indicate "Available" before the remediations are able to run.

2.2.3.4. Enabling Auto Sync and perform initial manual sync

Click **Sync Inventory Status** and enable **Auto Sync** for the organization.



IMPORTANT

Make sure to sync manually for the first time before it starts.

It is normal that while syncing the inventory, you might get a notification indicating the number of hosts that are in disconnected status or not uploaded to your Hybrid Cloud Console inventory. At this stage, you must re-sync the inventory. In some cases, the host processing at Hybrid Cloud Console can take some time to remediate.

2.2.3.5. Disabling direct remediations on a host

By default the parameter is not set on each host. It is **True** *for the hostgroup* to allow the execution of playbooks by default on the Cloud Connector. Note that all the hosts that are present in that particular organization inherit the same parameters.

When the Satellite receives the remediation playbook run request from Cloud Connector, that request has a list of hosts where it should execute.

To ensure the playbook run does not get invoked from the cloud on a single host, set the **enable_cloud_remediations** parameter to **False** on that host.

2.2.3.6. Disabling direct remediation on a host group

By default the parameter is not set in the *system*. It is **True** *for the host group* to allow the execution of playbooks by default with the Cloud Connector.



NOTE

All the hosts that are present in that particular organization will inherit the same parameters.

Optionally, an Organization Administrator can disable the cloud remediations for the whole organization or host group. To disable remediations, change the **Global Parameter** in the Red Hat Satellite User Interface. Use the following steps to make this edit.

Procedure

1. Navigate to the [Satellite Dashboard](#).
2. Click **Configure** on the left navigation.
3. Click **Global Parameters**.
4. Click **Create Parameter**.
5. In the **Name** field, enter **enable_cloud_remediations**.
6. In the **Value** field, enter **false**.
7. Click **Submit**.

Verification step

Find your new parameter listed in the **Global Parameters** table.

2.2.3.7. Configuring inventory uploads

1. In the Satellite web UI, navigate to **Configure > Inventory Upload**.
2. Click on the **Configure Cloud Connector** button.

2.2.3.8. Verifying successful configuration

To verify that the playbook was successful, log in to [Red Hat Hybrid Cloud Console > the Settings icon \(⚙️\) > Settings > Integrations](#) and search for your Satellite Server.

2.2.4. Configuring Cloud Connector after upgrading Satellite Server 6.10 to 6.11



NOTE

This only applies to upgrades from Satellite version 6.10 to 6.11. Refer to the [Upgrading and Updating Red Hat Satellite](#) guide for more information.


To configure Cloud Connector after upgrading the Satellite Server, click **Configure Cloud Connector** button from **Configure > RH Cloud - Inventory Upload** to enable it on the new version of Satellite Server. Simultaneously, you are required to remove the previous source from the cloud manually on the Red Hat Hybrid Cloud Console after upgrading your Satellite Server.

Once the Cloud Connector is configured, it will remove the receptor bits and install the RHC bits. At the same time, the Cloud Connector announces all the organizations in the Satellite to the source and is ready to receive the connections.

2.2.5. Configuring Insights recommendations on Satellite

You can use Red Hat Satellite synchronization to provide Insights for Red Hat Enterprise Linux recommendations for Satellite-managed hosts. Use this procedure to configure Insights synchronization on Red Hat Satellite.

Procedure

1. Navigate to **Configure > Insights** to manually synchronize Insights for Red Hat Enterprise Linux recommendations. Click the **more options** icon  and choose **Sync recommendations**.
2. Optionally, toggle the **Synchronize Automatically** switch to the **ON** position to enable Satellite to download Insights recommendations from the Hybrid Cloud Console automatically, once a day.

You have now configured Red Hat Insights for Red Hat Enterprise Linux Synchronization on Satellite.

In the Satellite web UI, navigate to **Hosts > All Hosts** to see Insights for Red Hat Enterprise Linux recommendations for each Satellite-managed host.

CHAPTER 3. CREATING AND MANAGING REMEDIATION PLAYBOOKS IN INSIGHTS

The workflow to create playbooks is similar in each of the services in Insights for Red Hat Enterprise Linux. In general, you will fix one or more issues on a system or group of systems.

Playbooks focus on issues identified by Insights services. A recommended practice for playbooks is to include systems of the same RHEL major/minor versions because the resolutions will be compatible.

3.1. CREATING A PLAYBOOK TO REMEDIATE A CVE VULNERABILITY ON RHEL SYSTEMS

Create a remediation playbook in the Red Hat Insights vulnerability service. The workflow to create a playbook is similar for other services in Insights for Red Hat Enterprise Linux.

Prerequisites

- You are logged into the Red Hat Hybrid Cloud Console.



NOTE

No enhanced User Access permissions are required to create remediation playbooks.

Procedure

- Navigate to the [Security > Vulnerability > CVEs](#) page.
- Set filters as needed and click on a CVE.
- Scroll down to view affected systems.
- Select systems to include in a remediation playbook by clicking the box to the left of the system ID.



NOTE

Include systems of the same RHEL major/minor version, which you can do by filtering the list of affected systems.

- Click the **Remediate** button.
- Select whether to add the remediations to an *existing* or *new* playbook and take the following action:
 - Click **Add to existing playbook** and select the desired playbook from the dropdown list, OR
 - Click **Create new playbook** and add a playbook name.
 - Click Next.
- Review the systems to include in the playbook, then click **Next**.
- Review the information in the Remediation review summary.

- a. By default, **autoreboot** is enabled. You can disable this option by clicking **Turn off autoreboot**.
- b. Click **Submit**.

Verification step

1. Navigate to [Automation Toolkit > Remediations](#).
2. Search for your playbook. You should see your playbook.

3.1.1. Creating playbooks to remediate CVEs with security rules when recommended and alternate resolution options exist

Most CVEs in Red Hat Insights for RHEL will have one remediation option for you to use to resolve an issue. Remediating a CVE with security rules might include more than one resolution a recommended and one or more alternate resolutions. The workflow to create playbooks for CVEs that have one or more resolution options is similar to the remediation steps in the advisor service.

For more information about security rules, see [Security rules](#), and [Filtering lists of systems exposed to security rules](#) in [Assessing and Monitoring Security Vulnerabilities on RHEL Systems](#) .

Prerequisites

- You are logged into the Red Hat Hybrid Cloud Console.



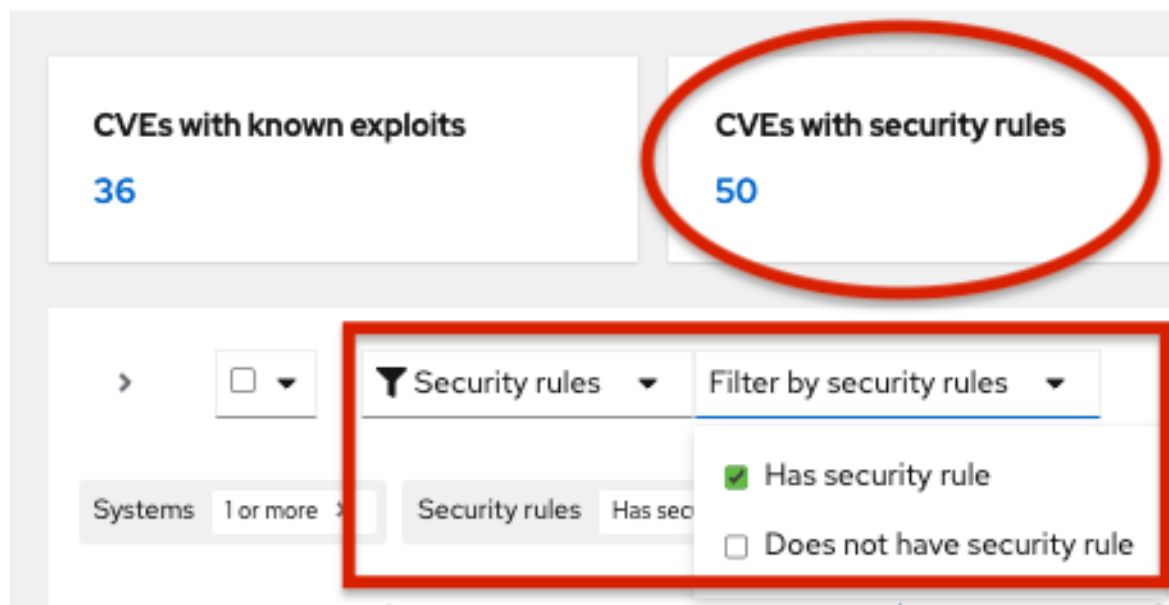
NOTE

You do not need enhanced User Access permissions to create remediation playbooks.

Procedure

1. Navigate to [Security > Vulnerability > CVEs](#)
2. Set filters if needed (for example, filter to see **CVEs with security rules** to focus on issues that have elevated risk associated with them). Or, click the CVEs with security rules tile on the dashbar. Both options show in the example image.

CVEs ?



3. Click a CVE in the list.



4. Scroll to view affected systems, and select systems you want to include in a remediation playbook by clicking the box to the left of the system ID on the **Review systems** page. (Selecting one or more systems activates the Remediate button.)



NOTE

Recommended: Include systems of the same RHEL major or minor version by filtering the list of affected systems.

5. Click **Remediate**.
6. Decide whether to add the remediations to an existing or new playbook by taking one of the following actions:
 - Choose **Add to existing playbook** and select the desired playbook from the dropdown list, OR
 - Choose **Create new playbook**, and add a playbook name. For this example, HCCDOC-392.
7. Click **Next**. A list of systems shows on the screen.
8. Review the systems to include in the playbook (deselect any systems that you do not want to include).
9. Click **Next** to see the **Review and edit actions** page, which shows you options to remediate the CVE. The number of items to remediate can vary. You will also see additional information (that you can expand and collapse) about the CVE, such as:
 - **Action:** Shows the CVE ID.

- **Resolution:** Displays the recommended resolution for the CVE. Shows if you have alternate resolution options.
- **Reboot required:** Shows whether you must reboot your systems.
- **Systems:** Shows the number of systems you are remediating.

10. On the **Review and edit actions** page, choose one of two options to finish creating your playbook:

- **Option 1:** To review all of the recommended and alternative remediation options available (and choose one of those options):
 - Select **Review and/or change the resolution steps for this 1 action** or similar based on your actual options.

The screenshot shows the 'Remediate with Ansible' interface. The left sidebar has four steps: 1. Select playbook, 2. Review systems, 3. Review and edit actions (highlighted), and 4. Remediation review. The main content area is titled 'Review and edit actions' and contains the following text: 'You have selected 1 item to remediate. 1 of 1 item allows for you to chose from multiple resolution steps.' Below this is a radio button option: 'Review and/or change the resolution steps for this 1 action.' A table follows with columns: Action, Resolution, Reboot required, and Systems. The table contains one row for CVE-2021-4034 with a resolution of '[TEMPORARY MITIGATION] Block pkexec with empty first argument with systemtap' and 1 alternate resolution. Below the table is another radio button option: 'Accept all recommended resolution steps for all actions' with a sub-note: 'You may modify reboot status to manual reboot in the next step, or from the playbook.'

Action	Resolution	Reboot required	Systems
> CVE-2021-4034	[TEMPORARY MITIGATION] Block pkexec with empty first argument with systemtap 1 alternate resolution	Not required	6

b. Click **Next**.

- On the **Choose action: <CVE information>** page, click a tile to select your preferred remediation option. The bottom edge of the tile highlights when you select it. The recommended solution is highlighted by default.

The screenshot shows the 'Remediate with Ansible' interface at the 'Choose action' step. The left sidebar has five steps: 1. Select playbook, 2. Review systems, 3. Review and edit actions, 4. Choose actions (highlighted), and 5. Remediation review. The main content area is titled 'Choose action: CVE_2021_4034_POLKIT' and contains the following text: 'Review the possible resolution steps and select which to add to your playbook.' Below this is the text 'Resolution affects 6 systems'. There are two tiles representing resolution options. The first tile is highlighted with a blue border and contains: '[TEMPORARY MITIGATION] Block pkexec with empty first argument with systemtap', 'Resolution from "CVE-2021-4034"', and 'Reboot not required'. The second tile contains: 'Update polkit to fix CVE-2021-4034', 'Resolution from "CVE-2021-4034"', and 'Reboot not required'. At the bottom of the page are three buttons: 'Next' (highlighted), 'Back', and 'Cancel'.

d. Click **Next**.

- **Option 2:** To accept all recommended remediations:
 - Choose **Accept all recommended resolutions steps for all actions**

Remediate with Ansible
Add actions to an Ansible Playbook

1 Select playbook
2 Review systems
3 **Review and edit actions**
4 Remediation review

Review and edit actions

You have selected 1 item to remediate. 1 of 1 item allows for you to chose from multiple resolution steps.

Review and/or change the resolution steps for this 1 action.

Action	Resolution	Reboot required	Systems
> CVE-2021-4034	[TEMPORARY MITIGATION] Block pkexec with empty first argument with systemtap 1 alternate resolution	Not required	6

Accept all recommended resolution steps for all actions
You may modify reboot status to manual reboot in the next step, or from the playbook.

11. Review information about your selections and change options for autoreboot of systems on the **Remediations review** page. The page shows you the:

- Issues you are adding to your playbook.
- Options for changing system autoreboot requirements.
- Summary about CVEs and resolution options that to fix them.

Remediate with Ansible
Add actions to an Ansible Playbook

1 Select playbook
2 Review systems
3 Review and edit actions
4 Choose actions
 CVE_2021_4034_PO
 LKIT
5 **Remediation review**

Remediation review

Issues listed below will be added to the playbook HCCDOC-392.

The playbook HCCDOC-392 **does not** auto reboot systems.

Turn on autoreboot

Action	Resolution	Reboot required	Systems
> CVE-2021-4034	[TEMPORARY MITIGATION] Block pkexec with empty first argument with systemtap	Not required	6

Submit **Back** Cancel

12. Optional. Change autoreboot options on the **Remediation review** page, if needed. (Autoreboot is enabled by default, but your settings might vary based on your remediation options.)
13. Click **Submit**. A notification displays that shows the number of remediation actions added to your playbook, and other information about your playbook.

Verification step

1. Navigate to [Automation Toolkit > Remediations](#)

2. Search for your playbook.
3. To run (execute) your playbook, see [Executing remediation playbooks from Insights for Red Hat Enterprise Linux](#).

3.2. MANAGING REMEDIATION PLAYBOOKS IN INSIGHTS FOR RED HAT ENTERPRISE LINUX

You can download, archive, and delete existing remediation playbooks for your organization. The following procedures describe how to perform common playbook-management tasks.

Prerequisites

- You are logged into the Red Hat Hybrid Cloud Console.



NOTE

No enhanced permissions are required to view, edit, or download information about existing playbooks.

3.2.1. Downloading a remediation playbook

Use the following procedure to download a remediation playbook from the Insights for Red Hat Enterprise Linux application.

Procedure

1. Navigate to [Automation Toolkit > Remediations](#).
2. Locate the playbook you want to manage and click on the name of the playbook. The playbook details are visible.
3. Click the **Download playbook** button to download the playbook YAML file to your local drive.

3.2.2. Archiving a remediation playbook

You can archive a remediation playbook that is no longer needed, but the details of which you want to preserve.


Procedure

1. Navigate to [Automation Toolkit > Remediations](#).
2. Locate the playbook you want to archive.
3. Click on the options icon (`:`) and select **Archive playbook**. The playbook is archived.

3.2.3. Viewing archived remediation playbooks

You can view archived remediation playbooks in Insights for Red Hat Enterprise Linux.


Procedure

1. Navigate to [Automation Toolkit > Remediations](#).
2. Click the **More options** icon  that is to the right of the Download playbook button and select Show archived playbooks.

3.2.4. Deleting a remediation playbook

You can delete a playbooks that is no longer needed.

Procedure

1. Navigate to [Automation Toolkit > Remediations](#).
2. Locate and click on the name of the playbook you want to delete.
3. On the playbook details page, click the **More options** icon  and select **Delete**.

3.2.5. Monitoring remediation status

You can view the remediation status for each playbook that you execute from the Insights for Red Hat Enterprise Linux remediations service. The status information tells you the results of the latest activity and provides a summary of all activity for playbook execution. You can also view log information for playbook execution.

Prerequisites

- You are logged into the Red Hat Hybrid Cloud Console.

Procedure

1. Navigate to [Automation Toolkit > Remediations](#). The page displays a list of remediation playbooks.
2. Click on the name of a playbook.
3. From the **Actions** tab, click any item in the **Status** column to view a pop-up box with the status of the resolution.

To monitor the status of a playbook in the Satellite web UI, see [Monitoring Remote Jobs](#) in the Red Hat Satellite *Managing Hosts* guide.

CHAPTER 4. EXECUTING REMEDIATION PLAYBOOKS

After you create a remediation playbook, you can download and run the playbook using your organization's Ansible workflow, or execute the playbook on remote systems from the Insights for Red Hat Enterprise Linux application.

4.1. EXECUTING REMEDIATION PLAYBOOKS FROM THE INSIGHTS USER INTERFACE

After installing the `rhc` client on systems in your infrastructure, you can execute remediation playbooks on remote RHEL systems, directly from the Insights for Red Hat Enterprise Linux application.

Prerequisites

- You must be logged in to the Red Hat Hybrid Cloud Console.
- You must be a member of a User Access group with the **Remediations administrator** role.

Procedure

1. Navigate to [Automation Toolkit > Remediations](#).
2. Select a remediation playbook to run and click on the playbook name.
3. Click the **Execute playbook** button.
4. On the popup, click on the **Execute playbook on systems** button. The playbook runs on those systems.

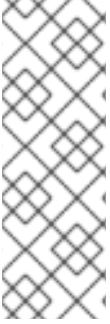
4.2. EXECUTING REMEDIATIONS FROM THE SATELLITE USER INTERFACE

You can also remediate using the Satellite User Interface.

Prerequisites

- You are a **Sources Administrator**.
- You are a **Remediations Administrator**.
- You have completed Host registration using the Insights client.

For specific instructions, see [Creating an Insights Remediation Plan for Hosts](#) in the Satellite Managing Hosts documentation.

**NOTE**

When you introduce a new host into your Satellite inventory, by means of provisioning or registration, two automatic background tasks will initiate. It will take 24 hours for these tasks to complete. This is a typical time frame for the automatic synchronization.

If you identify security issues or another scenario that warrants not waiting 24 hours for the automatic sync, you can manually synchronize by clicking the sync button in the UI. This manual sync will complete in a few minutes.

To see the procedures for enabling automatic and manual synchronization, see the [Configuring Synchronization of Insights Recommendations for Hosts](#) in the Satellite documentation.

CHAPTER 5. USING PATCH TEMPLATES FOR REMEDIATIONS

The Red Hat Insights patch application supports scheduled patching cycles.

Patch templates do not affect **yum/dnf** operations on the host, but they allow you to refine your patch status reporting in Red Hat Insights. You can use the templates to create remediation playbooks for simple patch cycles.

5.1. USING PATCH TEMPLATES WITH REMEDIATIONS

Patch templates can include one or more remediations that you want to apply to multiple systems. You can create a patch template to update a group of systems in a test environment, and use the same patch template to update systems in a production environment on a different day.

For more information about creating and using patch templates with remediations, refer to [System Patching Using Ansible Playbooks via Remediations](#).



NOTE

After you apply a patch template to the systems you assign, you will not see more recently published advisories that apply to those systems. Use Red Hat Hybrid Cloud Console notifications to ensure that you remain aware of newly published advisories that might affect your infrastructure.

For more information about notifications in the Red Hat Hybrid Cloud Console, see [Configuring notifications on the Red Hat Hybrid Cloud Console](#) .

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.