



Red Hat Insights 2022

Red Hat Connector Configuration Guide

Configuring and using the Red Hat connector feature

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Abstract

This guide is for Red Hat account users and system administrators who want to use the Red Hat connector feature to register Red Hat Enterprise Linux systems with Red Hat for services hosted on <https://console.redhat.com/insights>.

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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](#).

PROVIDING FEEDBACK ON RED HAT DOCUMENTATION

We appreciate your feedback on our documentation. To provide feedback, highlight text in a document and add comments.

Prerequisites

- You are logged in to the Red Hat Customer Portal.
- In the Red Hat Customer Portal, the document is in the **Multi-page HTML** viewing format.

Procedure

To provide your feedback, perform the following steps:

1. Click the **Feedback** button in the top-right corner of the document to see existing feedback.



NOTE

The feedback feature is enabled only in the **Multi-page HTML** format.

2. Highlight the section of the document where you want to provide feedback.
3. Click the **Add Feedback** pop-up that appears near the highlighted text.
A text box appears in the feedback section on the right side of the page.
4. Enter your feedback in the text box and click **Submit**.
A documentation issue is created.
5. To view the issue, click the issue link in the feedback view.

CHAPTER 1. INTRODUCING RED HAT CONNECTOR

Red Hat connector provides an improved way of connecting your system to the cloud-based Red Hat Insights services, letting you manage your systems more efficiently from the [Red Hat Hybrid Cloud Console](#). With Insights, you can proactively identify, prioritize, and resolve risks to security, compliance, performance, availability, and stability before they become urgent issues. You can manage your systems' settings through the [Red Hat connector dashboard](#).

The Insights settings you select in the dashboard are applied to all RHEL systems in your account that have enabled the **rhc connect** utility. The dashboard settings control the following actions for your connected systems:

- Connecting to Insights
- Using OpenSCAP for Compliance policies
- Enabling Red Hat Cloud Connector to fix issues directly from Insights



NOTE

Cloud Connector requires a Red Hat Smart Management subscription.

1.1. RED HAT CONNECTOR FEATURES

The Red Hat connector utility, **rhc**, comes with all RHEL 8.5 and newer installations. The utility comprises a CLI utility for RHEL and a Red Hat connector dashboard accessed through the [Red Hat Hybrid Cloud Console](#). The Red Hat connector daemon, **rhcd**, runs on the host and listens for messages from the Red Hat Hybrid Cloud Console. It also receives and executes remediation playbooks.

Accounts that are direct-connect systems can use the Red Hat Cloud Connector feature to resolve issues across your Red Hat infrastructure. This provides Red Hat Smart Management features without a Satellite subscription. A Red Hat Smart Management subscription is required.

1.2. RED HAT CONNECTOR CLI UTILITY

The Red Hat connector CLI provides users with options to manage the host connection with Insights. If Insights is enabled on the Configuration Dashboard, connecting with Red Hat connector will register the host using **insights-clients** in the background.

Additional resources

- [Red Hat Insights documentation](#)
- [Using Cloud Connector to remediate issues across your Red Hat Satellite infrastructure](#)

1.3. CONFIGURE USER ACCESS FOR CONNECTOR USERS

Before account users can access certain features in the Insights for Red Hat Enterprise Linux application, they need to be added to the correct User Access group(s) in [Red Hat Hybrid Cloud Console > User Access > Users](#). The privileges needed by a user depend on their need to perform the tasks described in the following subsections. At a high level, an Organization Administrator or User Access administrator performs the following steps to create new groups, or to add roles or members to existing groups:

- Create a User Access group for each role; for example, Remediations administrators.
- Add the role to the group; for example, Remediations administrator.
- Add members to the group. All members of the group will have administrator privileges to execute direct remediations from Insights for RHEL.

Your organization might already have User Access groups with the proper roles added. Onboarding new members might be as easy as adding them to an existing group.



NOTE

Existing groups can be searched, as well as the roles included in each group, in [Red Hat Hybrid Cloud Console > User Access > Groups](#).

1.3.1. User Access roles for users of the Red Hat connector dashboard

There are currently two roles that are relevant for connector dashboard users. These roles determine if a user can change settings or simply view them:

- **Red Hat connector administrator.** Members in a group with this role can perform any operations in the rhc manager.
- **Red Hat connector viewer.** This is a default permission for all users on your organization's Red Hat Hybrid Cloud Console account, allowing anyone to see the current status of the configuration.

1.3.2. User Access roles for users of remediations in Red Hat Insights

There are two roles that are relevant for remediations users and determine whether a user can view remediations details or execute direct remediations from Insights for RHEL:

- **Remediations administrator.** Members in a group with this role can perform any available operation against any remediations resource, including direct remediations.
- **Remediations user.** Members in a group with this role can create, view, update, and delete operations against any remediations resource. This is a default permission given to all Red Hat Hybrid Cloud Console users on your account.

1.3.3. Additional resources

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

CHAPTER 2. CONFIGURING RED HAT CONNECTOR

Red Hat connector performs critical system tasks, such as retrieving the current configuration of various services supported by the Red Hat connector dashboard and updating the current configuration of services. It also maintains a history of configuration changes and ensures that newly connected hosts are kept up to date with the latest configuration.

Red Hat connector updates a host through a change in the dashboard and through a new Red Hat connector connection event from Inventory.



NOTE

Currently, settings can apply only to all hosts connected with the Red Hat connector feature. You cannot configure a host or group of hosts differently.

Before configuring your host to connect through Red Hat connector, review the configuration in the Red Hat connector dashboard. The dashboard settings determine your host's configuration.

Configuring Red Hat connector comprises the following tasks:

- Enabling a Red Hat Ansible repository
- Installing Ansible
- Installing the **rhc-worker-playbook** package
- Running **rhc connect**

2.1. SETTING UP RED HAT CONNECTOR

Prerequisites

- RHEL 8.5 is installed.
- The host must be registered and have a valid subscription.



NOTE

[Simple content access](#) is recommended.

- You are logged in as **root**.

Procedure

1. Enable the Ansible repository:

```
# subscription-manager repos --enable ansible-2.9-for-rhel-8-x86_64-rpms
Repository 'ansible-2.9-for-rhel-8-x86_64-rpms' is enabled for this system.
```

2. Install Ansible and the **rhc-worker-playbook** package:

```
# dnf -y install ansible rhc-worker-playbook
```

3. Connect with the Red Hat connector utility:

```
# rhc connect
```

When prompted for your username and password, use your credentials from your Red Hat customer portal account.

Connecting <\$HOSTNAME> to Red Hat.
This might take a few seconds.

Username: <\$USERNAME>
Password: <\$PASSWORD>

- Connected to Red Hat Subscription Management
- Activated the Red Hat connector daemon

Manage your Red Hat connector systems: <https://red.ht/connector>

Verification

1. Ensure you see a similar message for Ansible and the **rhc-worker-playbook**:

```
Installed:
```

```
ansible-2.9.27-1.el8ae.noarch          python3-jmespath-0.9.0-11.el8.noarch
rhc-worker-playbook-0.1.5-3.el8_4.x86_64  sshpass-1.06-3.el8ae.x86_64
```

```
Complete!
```

2. You should see a similar message for Red Hat connector:

- This system is connected to Red Hat Subscription Management
- Activated the Red Hat connector daemon

Manage your Red Hat connector systems: <https://red.ht/connector>



NOTE

The **rhcd daemon** does not write to a separate log file; it puts data in the **systemd journal** that is located in **/var/log/journal**. Use the **journalctl** command to view the log. Some messages are written to **stdin/stdout**.

Additional resources

- [Performing a standard RHEL installation](#)
- [Performing an advanced RHEL installation](#)
- [Product Documentation for Red Hat Enterprise Linux 8](#)
- [Quick registration for RHEL](#)
- [Introduction to Red Hat Subscription Management Workflows](#)

2.2. DISCONNECTING FROM THE DASHBOARD

Use this procedure on each RHEL system that you want to remove from the Red Hat connector dashboard.



IMPORTANT

Disconnecting through Red Hat connector also unregisters your host from the Red Hat Customer Portal.

Procedure

1. Run **rhc disconnect**:

```
# rhc disconnect
```

```
Disconnecting iqe-e2e-rhc-vm-agmwwfgvet from console.redhat.com.
This might take a few seconds.
```



NOTE

The **rhc disconnect** command detaches subscriptions and unregisters from Red Hat Subscription Management.

Verification

1. You should see a similar message:

```
Disconnecting <$HOSTNAME> from Red Hat.
This might take a few seconds.
```

- Deactivated the Red Hat connector daemon
- Disconnected from Red Hat Subscription Management

```
Manage your Red Hat connector systems: https://red.ht/connector
```

2.3. USING ADDITIONAL CLI OPTIONS

View additional options for the **rhc** command.

Procedure

1. Run **rhc status** to show the status:

```
# rhc status
```

```
Connection status for <$HOSTNAME>:
```

- Connected to Red Hat Subscription Manager
- The rhc daemon is active

```
See all your connected systems: https://red.ht/connector
```

2. Run **ps** and pipe through **grep** to display the connector **rhcd** process.

■

```
# ps -u root | grep rhc
PID TTY TIME COMMAND
14992 ? 0:00 /usr/sbin/rhcd
```

3. Run **systemctl status rhcd** to view the on/off status of the **rhcd daemon**.

```
# systemctl status rhcd
```

4. Enter **rhc --help** with no other options.

```
$ rhc --help
NAME:
  rhc - control the system's connection to console.redhat.com

USAGE:
  rhc [global options] command [command options] [arguments...]

VERSION:
  0.0.git.310.a47ac17

COMMANDS:
  connect    Connects the system to console.redhat.com
  disconnect Disconnects the system from console.redhat.com
  facts      Prints information about the system.
  status     Prints status of the system's connection to console.redhat.com
  help, h    Shows a list of commands or help for one command

GLOBAL OPTIONS:
  --help, -h    show help (default: false)
  --version, -v print the version (default: false)
```

2.4. ADDITIONAL RESOURCES

- [Creating Red Hat Customer Portal Activation Keys](#)
- [Client Configuration Guide for Red Hat Insights](#)

CHAPTER 3. USING THE RED HAT CONNECTOR DASHBOARD

Manage RHEL system connections to Insights for Red Hat Enterprise Linux in the [Red Hat connector dashboard](#). The RHEL systems in your account are visible in the dashboard after the Red Hat connector utility is enabled on each system. You control all connected RHEL systems and whether to use the Insights for RHEL services from the Red Hat connector dashboard.

Changes in the dashboard create a playbook that is pushed to all connected systems. The dashboard provides a log that shows you the playbook runs and all connected systems.

The dashboard provides a main on/off switch for the connection to Insights for RHEL. With the **rhc** command and the dashboard, there is no granular control over individual system connections, and there is no additional control over the data that is packaged on your systems and uploaded to Insights for RHEL.

To control the type of data that each system provides to Insights, you must use the **insights-client** command. For example, if you want to apply data obfuscation or data redaction to the system information that is sent to Insights, you must configure the obfuscation and redaction values on each system.

3.1. OPENING THE RED HAT CONNECTOR DASHBOARD

Use the Red Hat connector dashboard to view the number of connected systems and connection settings.

The first time you open the dashboard, it shows a pane for **rhc** command syntax that you can fill in and copy to simplify command entry on your RHEL systems if they are not already running the Red Hat connector utility. You can close this pane, but it cannot be reopened.

Prerequisites

- You must have **Red Hat connector viewer** privileges, assigned in User Access, to perform this procedure.

Procedure

1. Log in to your Red Hat organization account at [Red Hat Hybrid Cloud Console](#).
2. Click the gear icon and click **Settings**.
3. Click **Red Hat Connector** tab to view the Red Hat connector dashboard. The dashboard shows the number of connected systems and the Red Hat Insights connection settings.

3.2. EDITING SETTINGS IN THE RED HAT CONNECTOR DASHBOARD

Use the Red Hat connector dashboard to edit Red Hat connector settings. You can enable settings to use OpenSCAP for compliance policies and Red Hat Cloud Connector to fix issues directly from Red Hat Insights. Enabling OpenSCAP automatically installs the OpenSCAP packages required to use the Compliance feature.

Figure 3.1. Red Hat connector Dashboard > Services

Systems connected with Red Hat connector
4
[View in Inventory](#)

Services [Activation keys](#)

Red Hat Insights [Save changes](#) [View log](#)

Red Hat Insights is a proactive operational efficiency and security risk management solution in Red Hat Enterprise Linux (RHEL) subscriptions for versions 6.4 and higher, as well as public cloud versions of RHEL. It helps identify, prioritize, and resolve risks to security, compliance, performance, availability, and stability before they become urgent issues. Insights also enables users to monitor for adherence to internal policies and understand configuration changes over time.

Settings

- Connect to Red Hat Insights**
 Required to use Insights applications. Enables Advisor, Drift, Patch, Vulnerability and Policies applications.
- Use OpenSCAP for Compliance policies**
 Required to use Compliance application
- Enable Cloud Connector to fix issues directly from Insights**
 Cloud Connector allows you to push Remediation Ansible Playbooks directly from Insights to your systems.

Prerequisites

- You must have **Red Hat connector administrator** privileges, assigned in User Access, to perform this procedure.

Procedure

1. Log in to your Red Hat organization account at [Red Hat Hybrid Cloud Console](#).
2. Click the gear icon and click **Settings**.
3. Click the **Red Hat Connector** tab to view the dashboard **Services** tab. This tab shows the number of connected systems and the Red Hat Insights connection settings.
4. Use the slider buttons to select Insights settings for your connected systems. The changes are applied to all connected systems and to all future systems that connect through the Red Hat connector utility.

3.3. USING RED HAT CONNECTOR TO REMEDIATE AN ISSUE

Red Hat Cloud Connector allows you to remediate your direct-connect RHEL systems from Red Hat Insights when you have Red Hat connector installed on your RHEL 8.5 system and a Red Hat Smart Management subscription.

3.3.1. Creating and updating a remediation playbook

There are multiple contexts within Insights from which you can create a remediation playbook or update an existing one. You can use the following Insights applications to create or update a playbook:

- Advisor
- Compliance
- Patch
- Vulnerability

Additional resources

- [Remediating Configuration Issues Using Advisor and Ansible Playbooks](#)
- [Remediating Security-Policy Compliance issues using Ansible Playbooks](#)
- [System Patching Using Ansible Playbooks via Remediations](#)
- [Remediating Security Exposures Using the Vulnerability Service and Ansible Playbooks](#)

3.3.2. Executing a remediation playbook

Execute a playbook directly from the Insights for RHEL application.

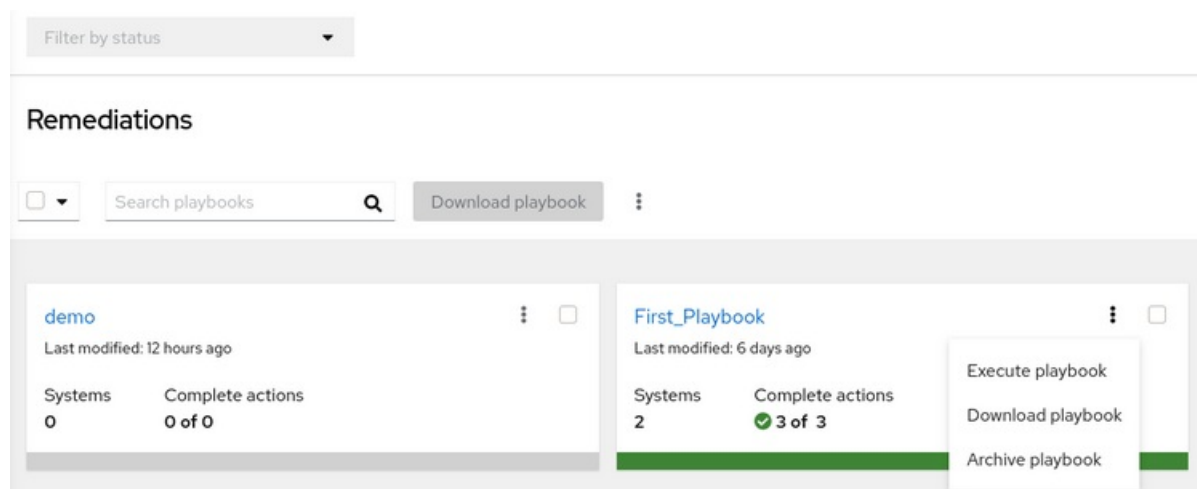
Prerequisites

- You must have **Remediations administrator** privileges, assigned in User Access, to perform this procedure.

Procedure

1. Click **Remediations** on the [Red Hat connector dashboard](#). The **Remediations** page lists the playbook that is available to be executed.
2. Open the playbook to review its details (Action, Systems, Activity) or directly trigger an execution.

Figure 3.2. Remediations page



3. Clicking **Execute playbook** displays a summary of the type of connection to use when pushing the playbook. **Direct connection** refers to the host connecting through the Red Hat connector client.

Figure 3.3. Execute the playbook

Execute playbook ✕

Playbook contains **3 actions** affecting **2 systems**.

› [About remote execution with Cloud connector](#)

Executed Ansible Playbooks run on eligible systems with Cloud Connector. The playbook will be pushed immediately after selecting “Execute playbook”. If the playbook has “Auto reboot” on, systems requiring reboot to complete an action will reboot.

[Learn more about Cloud Connector](#)

Connection status of systems

Connectio...	Syste...	Connection status
Direct connection	1	Ready
Direct connection	1	Cannot remediate - Cloud connector not defined Remediation from Insights requires Cloud connector. Cloud connector can be enabled via Satellite, or through RHC (Red Hat connector) Learn how to configure

Execute playbook on 1 system
Download playbook

Verification

1. The remediations playbook successfully executed.
2. The issue was marked as resolved on Remediations.
3. The issue was resolved on the system.

3.4. ADDITIONAL RESOURCES

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

CHAPTER 4. TROUBLESHOOTING RED HAT CONNECTOR ISSUES

System logs are a great source of information when troubleshooting a Red Hat connector issue. In addition, it is helpful to be aware of any known issues.

4.1. CONSULTING AND INTERPRETING LOG FILES

Troubleshooting an issue often starts by looking at the logs to see what happened during a given event. You can consult logs by running one of two CLI commands:

```
# journalctl -u rhcd
```

or

```
# journalctl -u rhcd -f
```

4.2. KNOWN ISSUES

There are occasionally issues that the user or org admin should be aware of when working with their hosts.

The following known issues are documented for Red Hat connector:

1. Red Hat connector is stuck in the **checking** status if a Red Hat Satellite-connected system is also in the remediation plan.

If you have a remediation plan that contains one or more Red Hat connector systems and one or more Red Hat Satellite-connected systems, when you click the **Execute Playbook** button on the Red Hat connector dashboard, the Red Hat connector system will be stuck at **checking**. You will not be able to execute the remediation plan on the Red Hat connector system.



NOTE

Red Hat verified this issue using the Vulnerability service. It has not been verified with every service on the Red Hat connector dashboard.

Here are the four possible scenarios:

- Red Hat connector only = Ready
 - Red Hat connector + Direct Connected = Ready
 - Red Hat connector + Satellite = CHECKING
 - Red Hat connector + Satellite + Direct Connect = CHECKING
See [RHC stuck at "checking" if a Satellite-connected system is also in the remediation plan](#) for more information.
2. The **insights-client** command is not invoked after executing remediation with Red Hat connector.
Playbooks generated by Remediations generally have the following structure:
 - Fix the problems listed in the remediation.

- Optionally reboot the host.
- Execute **insights-client** so that [Red Hat Hybrid Cloud Console](#) has an updated version of the host's state.
If a playbook is invoked by clicking **Execute playbook** in the **Remediations** UI, and if the targeted host is running Red Hat connector (as opposed to being managed by a Satellite), the final step is missing. As a result, [Red Hat Hybrid Cloud Console](#) never receives an updated view of the host's state.

See [insights-client not invoked after executing remediation via RHC](#) for more information.

3. The Red Hat connector throws a serialization error after executing a remediations playbook. Each time a remediations playbook is executed through Red Hat connector, the following log entry displays:

```
[rhcd] 2021/10/01 16:49:37 /builddir/build/BUILD/rhc-0.2.0/cmd/yggd/grpc.go:168: cannot send message 0e8eb387-acf2-48f9-8975-e6165f0fb2b3: rpc error: code = Internal desc = Failed to serialize response!
```

See [rhc throws serialization error after executing remediations playbook](#) for more information.

4. Users who do not have the Red Hat connector administrator role should not be able to update Red Hat connector settings
A user who has only the Red Hat connector viewer RBAC role should not be able to update Red Hat connector settings on the [Red Hat Hybrid Cloud Console](#). Currently, the **Save changes** button remains enabled, which allows an unauthorized user to update the settings.

This bug affects the UI and the backend service because the playbook execution to update the settings in the connected systems is triggered by the Config Manager service when **Save Changes** is pressed.

See [Users who doesn't have RHC administrator role shouldn't be able to update RHC settings](#) for more information.