Configuring notifications on the Red Hat Hybrid Cloud Console

Configuring Hybrid Cloud Console settings so that account users receive event-triggered notifications
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Abstract

Use notifications to learn about identified events that have occurred and might impact your organization. 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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PREFACE

Use the notifications service on the Red Hat Hybrid Cloud Console so that you do not have to check your user interface for event-triggered notifications. Instead, when events occur, the service automatically sends notifications about the events to you.

IMPORTANT

Groups and roles, including the Notifications administrator role, must be configured by an Organization Administrator in order for events to be reported through email and integrations.
CHAPTER 1. INTRODUCTION TO RED HAT HYBRID CLOUD CONSOLE NOTIFICATIONS AND INTEGRATIONS

Through the notifications service, Red Hat Hybrid Cloud Console services have a standardized way of notifying users of events. By setting up behavior groups, a Notifications administrator specifies the notification delivery method and whether event notifications are sent to all users on an account, specific users, or only to Organization Administrators.

For example, the Notifications administrator can configure the service to send an email notification for new-recommendation hits on a system. Similarly, the Notifications administrator might decide to trigger a notification that sends a message to a third-party application using the webhook integration type.

An Organization Administrator designates Notifications administrators by creating a User Access group with the Notifications administrator role, then adding account members to the group. A Notifications administrator then configures notification behavior groups that define actions taken when service-specific events occur.

The notifications service transmits event-triggered notifications to users’ email accounts or to third-party applications using webhooks. Users on the Hybrid Cloud Console account set their own preferences for receiving email notifications. In User preferences > Notifications > application bundle, each user configures their personal settings to receive event notification emails as an instant notification or daily digest.

**IMPORTANT**

Selecting Instant notification for any service can cause the recipient to receive a very large number of emails.

1.1. HYBRID CLOUD CONSOLE NOTIFICATION AND INTEGRATION CONCEPTS

Review key concepts to understand how the notifications service works:

**Table 1.1. Notifications concepts**

<table>
<thead>
<tr>
<th>Concept</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Actions</td>
<td>Operations are performed in response to an event. Examples include sending an email or forwarding a notification to an integration endpoint, such as a webhook. Actions are defined in behavior groups that are configured by a Notifications administrator.</td>
</tr>
<tr>
<td>Application bundle</td>
<td>Application bundle refers to an application group within the Hybrid Cloud Console, such as Red Hat Enterprise Linux or OpenShift.</td>
</tr>
</tbody>
</table>
Behavior groups

Behavior groups determine what actions to take when an event occurs, and whether to notify all account users or only designated administrators. After a Notifications administrator creates a behavior group, they associate it with event types which enables Notifications administrators to apply the same actions to all application-specific events.

**NOTE:** Notifications administrators configure notification behavior groups separately for each application bundle.

Email preferences

Individual users with access to applications on the Hybrid Cloud Console set their personal email preferences. Users can configure personal email notifications to arrive either instantly, as the event occurs, or consolidated into a daily digest that arrives at midnight, 00:00 Coordinated Universal Time (UTC), for all accounts.

**IMPORTANT:** Selecting instant notification for any service can potentially result in the recipient receiving a very large number of emails.

Event type

Event types are application-specific system changes that trigger the application or service to initiate notification actions. Event types are created by application developers at Red Hat and are unique for each application bundle.

Integrations

Integrations define the method of delivery of notifications to third-party applications configured by the Notifications administrator. After integrations are configured, the notifications service sends the HTTP POST messages to endpoints.

User access roles

The following User Access roles interact with notifications:

* Organization Administrator
* Notifications administrator
* Notifications viewer

### 1.2. HYBRID CLOUD CONSOLE NOTIFICATIONS METHODS

You can use the following methods to integrate the Hybrid Cloud Console into your organization’s workflows:
Hybrid Cloud Console APIs

Hybrid Cloud Console APIs are publicly available and can be queried from any authenticated client (role-based access controlled).

Webhooks

Webhooks work in a similar way to APIs, except that they enable one-way data sharing when events trigger them. APIs share data in both directions. Applications that allow inbound data requests are said to have exposed webhooks.

You can configure the Hybrid Cloud Console to send POST messages to specific endpoints in exposed webhooks within applications. This capability works with the notifications service. For example, you can configure the Hybrid Cloud Console to automatically email new Advisor recommendations to selected administrator accounts as soon as the Hybrid Cloud Console identifies them.

After you configure the endpoints in the notifications service, you can subscribe to a stream of Hybrid Cloud Console events and automatically forward that stream to the webhooks of your choice. Each event contains additional metadata, which you can use to process the event, for example, to perform specific actions or trigger responses, as part of your operational workflow. You configure the implementation and data handling within your application.

Third-party application integrations

You can use Hybrid Cloud Console third-party application integrations in two ways, depending on your use case:

- Use Hybrid Cloud Console APIs to collect data and perform tasks.
- Subscribe to streams of Hybrid Cloud Console events.

You can use Hybrid Cloud Console integrations to forward events to specific third-party applications. The Red Hat Insights application for Splunk forwards selected Hybrid Cloud Console events to Splunk. This allows you to view and use data from Hybrid Cloud Console in your existing workflows from the Red Hat Insights application for Splunk dashboard.

Additional resources

- For more information about the available endpoints for applications and services, refer to the Hybrid Cloud Console API documentation.
- For an example of CSV-formatted API responses, see the System Comparison API Documentation.
- For examples to help you to get started quickly with authentication and with querying API endpoints, see Red Hat Insights API cheat sheet.
- For more information about how to configure and use webhooks, refer to Configure integrations.
- For information about security, see Red Hat Insights Data and Application Security.
For more information about integrating third-party applications, see Integrating the Red Hat Hybrid Cloud Console with third-party applications.
To configure notifications and integrations settings, you must be a member of a group with the Notifications administrator role. This group must be configured in User Access by an Organization Administrator. In the Red Hat Hybrid Cloud Console > Settings menu (gear icon) > Identity & Access Management > User Access > Groups, an Organization Administrator performs the following high-level steps:

1. Create a User Access group for Notifications administrators.
2. Add the Notifications administrator role to the group.
3. Add members (users with account access) to the group.

**Organization Administrator**

The Organization Administrator configures the User Access group for Notifications administrators, then adds the Notifications administrator role and users to the group.

**Notifications administrator**

Notifications administrators configure how applications interact with notifications. Notifications administrators configure behavior groups to define how applications notify users about events. Administrators can configure additional integrations as they become available, as well as edit, disable, and remove existing integrations.

**Notifications viewer**

The Notifications viewer role is automatically granted to everyone on the account and limits how a user can interact with notifications service views and configurations. A viewer can view notification configurations, but cannot modify or remove them. A viewer also cannot configure, modify, or remove integrations.

**Additional resources**

- To learn more about User Access on the Red Hat Hybrid Cloud Console, see the User Access Configuration Guide for Role-based Access Control (RBAC).

### 2.1. CREATING AND CONFIGURING A NOTIFICATIONS GROUP IN THE HYBRID CLOUD CONSOLE

An Organization Administrator of a Hybrid Cloud Console account creates a group with the Notifications administrator role and adds members to the group.

**Prerequisites**

- You are logged in to the Red Hat Hybrid Cloud Console as an Organization Administrator.

**Procedure**

1. Click the **gear icon** in the upper right quadrant of the application window and select **Identity & Access Management**.
2. Under **Identity & Access Management** expand **User Access** if necessary and select **Groups**.

3. Click **Create group**.

4. Enter a group name, for example, **Notifications Administrators**, and a description, and then click **Next**.

5. Find **Notifications administrator** in the list of roles, select the check box next to it, and then click **Next**.

6. Add members to the group:
   a. Search for individual users or filter by username, email, or status.
   b. Check the box next to each intended member’s name, then click **Next**.

7. Review the details and click **Submit** to finish creating the group.

**Verification**

- Verify that your new group is listed on the **Groups** page.

### 2.2. EDITING OR REMOVING A USER ACCESS GROUP

You can make changes to an existing User Access group in the Hybrid Cloud Console and you can delete groups that are no longer needed.

**Prerequisites**

- You are logged in to the Red Hat Hybrid Cloud Console as an Organization Administrator.

**Procedure**

1. Find the group name in the **Red Hat Hybrid Cloud Console > Settings menu (gear icon) > Identity & Access Management > User Access > Groups**.

2. Click the options icon (⋮) on the far right of the group name row (⋮), and click **Edit** or **Delete**.

3. Make and save changes or delete the group.
CHAPTER 3. CONFIGURING INTEGRATIONS

The Red Hat Hybrid Cloud Console notifications and integrations services work together to transmit messages to third-party application endpoints, such as instant messaging platforms and external ticketing systems, when triggering events occur.

Notifications administrators can use these services to integrate Hybrid Cloud Console functionality into the operational workflow used in their organization. Integrations are configured by a Notifications administrator as endpoints on the Red Hat Hybrid Cloud Console > Settings > Integrations page.

NOTE

Webhook is the current integration type supported in the Red Hat Hybrid Cloud Console. When configured, the service sends an HTTP POST message to the specified third-party applications endpoint.

3.1. HYBRID CLOUD CONSOLE HTTP POST MESSAGES

The following screenshot is an example of an HTTP POST message sent to a third-party application endpoint from the Hybrid Cloud Console. Event types are specific to a service or application. For example, the Insights for RHEL application bundle currently notifies configured users of events from the policies, advisor, and drift services. The following example notification from the Insights for RHEL advisor service was triggered by a new recommendation on a host system.

```json
{
    "bundle": "rhel",
    "application": "advisor",
    "event_type": "new-recommendation",
    "timestamp": "2021-10-20T00:37:11.967169",
    "events": [
        {
            "payload": {
                "rule_id": "hardening_unencrypted_avahi\|HARDENING_UNENC_AVAIN", 2
                "rule_description": "Decreased security when Avahi is externally accessible",
                "total_risk": "3",
                "publish_date": "2021-08-31T12:00:00+00:00",
                "report_url": "https://console.redhat.com/insights/advisor/recommendations/harding_unencrypted_avahi\|HARDENING_UNENC_AVAIN/255375f1-1ab9-44f4-96d8-d57e6585b48a",
                "url": "https://console.redhat.com/insights/advisor/recommendations/harding_unencrypted_avahi\|HARDENING_UNENC_AVAIN/"
            },
            "metadata": {} 3
        }
    ],
    "inventory": {
        "inventory_id": "255375f1-1ab9-44f4-96d8-d57e6585b48a",
        "hostname": "rhel18desktop",
        "display_name": "rhel18desktop",
        "rhel_version": "8.4",
        "host_url": "https://console.redhat.com/insights/inventory/255375f1-1ab9-44f4-96d8-d57e6585b48a"
    }
}
```

In the example, the blocks contain the following information:

1. Information about the bundle and application sending the notification:
   - **bundle**: Name of the application bundle
   - **application**: Name of the individual application or service sending the event-triggered notification
• **event_type**: The event type that triggered the notification

• **account_id**: The Red Hat account from which the notification was sent

• **timestamp**: ISO-8601 formatted date showing when the notification was sent

2. Information about the application or service-specific event:

• **payload**: The application payload, a JSON string containing all the data sent by the application

3. Information about the system on which the event occurred. For example:

• **inventory_id**: System ID

• **hostname**: System name

• **rhel_version**: RHEL version running on the system

The metadata field is not currently used.

### 3.2. CREATING AND CONFIGURING INTEGRATIONS IN THE HYBRID CLOUD CONSOLE

The Notifications administrator creates and configures integrations for the organization so third-party applications can send event notifications to users.

**Prerequisites**

- You are logged into the Red Hat Hybrid Cloud Console as an Organization Administrator or as a user with Notifications Administrator permissions.

**Procedure**

1. In the Hybrid Cloud Console, navigate to **Settings (gear icon) > Integrations**.

2. Click **Add integration**:

   a. Enter an integration name.

   b. Select an integration type.

   c. Provide the endpoint URL.

   d. Confirm that the check box to enable SSL verification is selected.

   **IMPORTANT**

   SSL is essential for protecting the data sent to the integration endpoint. SSL should always be used when integrating the Red Hat Hybrid Cloud Console with third-party applications.

   e. Optional: Provide a secret token, if required. If defined, the secret token is used as an ‘X-Insight-Token’ header on the POST HTTP request.
NOTE
A secret token is essential for protecting the data sent to the integration endpoint and should always be used when integrating the Hybrid Cloud Console with third-party applications.

f. Click Save.

3. To verify that the new integration is listed on the Integrations page, enter the integration name in Filter by Name box.

NOTE
The new integration is enabled by default and available as an integration option when a Notifications administrator configures behavior groups in the notifications service. To disable the integration, toggle the switch in the Enabled column.

3.3. EDITING, DELETING, OR REMOVING INTEGRATIONS

The Notifications administrator can edit, remove, or disable any Hybrid Cloud Console integration listed on the Integrations page.

Prerequisites
- You are logged in to the Red Hat Hybrid Cloud Console as an Organization Administrator.

Procedure
1. Navigate to Red Hat Hybrid Cloud Console > Settings > Integrations.

2. Click the options icon (⋮) on the far right of the integration name row (⋮), and click Edit, Delete, or Disable.

3. Make and save changes, delete, or disable the integration.
CHAPTER 4. CONFIGURING HYBRID CLOUD CONSOLE NOTIFICATION BEHAVIOR GROUPS

The Notifications administrator configures notifications for the account through behavior groups. A behavior group defines which notifications will be sent to external services such as Microsoft Teams when a specific event is received by the notifications service. The Notifications administrator can link events from any Hybrid Cloud Console service to a behavior group.

After creating a behavior group, the Notifications administrator associates it with triggering events, which are unique to each application bundle.

When an event occurs, all users on the account who selected in their user preferences to receive notifications will receive them, as well as all third-party applications specified as integration actions in the behavior group.

4.1. CREATING A BEHAVIOR GROUP

Use the Create behavior group wizard to create a new behavior group in the Hybrid Cloud Console. The wizard enables you to select notifications, assign notifications to users or groups of users, and associate Hybrid Cloud Console events with behavior groups.

NOTE

You can associate events with multiple behavior groups. If a behavior group is not associated with any event, no notifications are sent when an event occurs.

You can create a maximum of 64 behavior groups within an organization.

Prerequisites

- An Organization Administrator has configured notification groups, roles, and members.
- You are logged in to the Red Hat Hybrid Cloud Console as a Notifications administrator.

Procedure

1. In the Hybrid Cloud Console, select the gear icon and then select Settings.

2. Under Settings, expand Notifications and select OpenShift, Red Hat Enterprise Linux or Console.

3. Click Create new group. The Create behavior group wizard opens.
4. Enter a group name, and then click Next. The Actions and recipients page opens.

5. From the Actions drop-down list, select Send an email or select an integration from the list:

- If you selected Send an email, select a recipient from the Recipient drop-down list. You can specify that the email notification go to all users in the organization, or you can limit the recipients to administrators in the organization. If User Access groups are configured, you can select a User Access group to receive email notifications.
• If you selected an integration such as **Integration: Slack**, **Integration: Splunk**, or **Integration: Webhook**, select an integration endpoint from the **Recipient** drop-down list (for example, **SPLUNK_AUTOMATION**).

**NOTE**

Configure endpoints for each integration in **Settings > Integrations**. If an action is disabled, no integrations exist for that event type.

6. Optional: To add additional actions to notify additional integration endpoints, click **Add action**.

7. When you have finished adding actions, click **Next**. The **Associate event types** page opens.

8. Select the types of events that you want to include in your notifications and then click **Next**. The **Review** page opens.
9. Review the settings you selected for the behavior group. To modify the settings, click Back. To save the settings and create the behavior group, click Finish.

Additional resources

- For more information about how to create User Access groups, see Managing access with roles and members.

4.2. MODIFYING A BEHAVIOR GROUP

Use the Edit behavior group wizard to modify settings for an existing behavior group. You can use the wizard to select notifications, assign notifications to users or groups of users, and associate Hybrid Cloud Console events with behavior groups.

**NOTE**

Events can be associated with multiple behavior groups. If a behavior group is not associated with an event, nothing happens when an event occurs.

Prerequisites

- An Organization Administrator has configured notification groups, roles, and members.
- You are logged into the Red Hat Hybrid Cloud Console with Notifications administrator privileges.

Procedure

1. Navigate to the Settings menu and select Settings.
2. Under **Settings**, expand **Notifications** and select an application bundle, such as Red Hat Enterprise Linux.

3. Click **Behavior Groups** to display the available behavior groups.

4. Click the more options menu icon in the top right corner of the behavior group you want to modify. The **Edit behavior group** wizard opens.

5. Enter a group name, and then click **Next**. The **Actions and recipients** page opens.

6. From the **Actions** drop-down list, select **Send an email** or select an integration from the list:
If you select **Send an email**, select a recipient from the **Recipient** drop-down list. You can specify that the email notification go to *all users* in the organization, or you can limit the recipients to *administrators* in the organization. If you have User Access groups configured, you can select a User Access group to receive email notifications.

- If you select an integration (such as **Integration: Webhook** or **Integration: Splunk**), select an integration endpoint from the **Recipient** drop-down list (for example, **SPLUNK_AUTOMATION**).

  **NOTE**

  You configure endpoints for each integration in **Settings > Integrations**.

7. Optional: To add additional actions to notify additional integration endpoints, click **Add action**.

8. When you have finished adding actions, click **Next**. The **Associate event types** page opens.
9. Select the types of events that you want to include in your notifications and then click **Next**. The **Review** page opens.

10. Review the settings that you selected for the behavior group. To continue to modify the settings, click **Back**. To save the settings for the behavior group, click **Finish**.
CHAPTER 5. CONFIGURING USER PREFERENCES FOR EMAIL NOTIFICATIONS

Each user on a Red Hat Hybrid Cloud Console account must opt in to receive email notifications about events. You can select the services from which to receive notifications as well as the frequency.

**IMPORTANT**

If you select **Instant notification** for any service, you might receive a very large number of emails.

**Prerequisites**

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

**Procedure**

1. Locate your user name in the upper-right part of the Hybrid Cloud Console window.
2. Click the arrow to the right of your user name and select **User Preferences**.
3. In the left navigation panel, click **My Notifications** and select a service bundle, for example **Subscriptions**.

   **IMPORTANT**
   
   If you select **Instant notification** for any service, you might receive a very large number of emails.

4. Select one of the following options:
   - **Daily digest**: Receive a daily summary of triggered application events that occur in a 24 hour time frame.
   - **Instant notification**: Receive an email immediately for each triggered application event.
   - **Weekly report**: Receive an email that contains the Advisor Weekly Report for the selected service.
   - **Unsubscribe from all**: Select this option if you do not want to receive any notifications for this service.

   **NOTE**
   
   The **Daily digest** and **Weekly report** are not available for all services.

5. Click **Save**.

Email notifications are delivered in the format and frequency that you selected.
NOTE

If you decide to stop receiving notifications, select **Unsubscribe from all** and click **Save**. You will no longer receive any email notifications unless you return to this screen and subscribe to them once again.
CHAPTER 6. TROUBLESHOOTING NOTIFICATION FAILURES WITH THE EVENT LOG AND INTEGRATION SETTINGS

The notifications service event log enables Notifications administrators to see when notifications are not working properly. The event log provides a list of all triggered events on the Red Hat Hybrid Cloud Console account, and actions taken (as configured in the associated behavior group) for the past 14 days.

In the **Actions** column, each event shows the integration type highlighted in green or red to indicate the status of the message transmission. The filterable event log is a useful troubleshooting tool to see a failed notification event and identify potential issues with endpoints. After seeing a failed action in the event log, the Notifications administrator can check the endpoint and the status of the last five connection attempts on the Integrations screen.

In the integrations service, the following connection statuses are reflected by color:

- **Green**: Five previous transmissions were successful.
- **Red**: Five previous transmissions were unsuccessful (timeout, 404 error, etc).
- **Yellow**: Connection is degraded; at least two of the five previous transmissions were unsuccessful.
- **Unknown**: The integration has not yet been called, or is not associated with a behavior group.

The event log can answer questions related to receipt of emails. By showing the email action for an event as green, the event log enables a Notifications administrator to confirm that emails were sent successfully.

Even when notifications and integrations are configured properly, individual users on the Red Hat Hybrid Cloud Console account must configure their user preferences to receive emails.

Before users receive notifications using the webhook integration type, a Notifications administrator must configure endpoints for your organization’s preferred webhook application.

**Prerequisites**

- You are logged in to the Red Hat Hybrid Cloud Console with Notifications administrator permissions.
Procedure

1. Navigate to Red Hat Hybrid Cloud Console > Settings > Notifications > Event log.

2. Filter the events list by event, application, or application bundle.

3. Select to show events from today, yesterday, the last seven days, the last 14 days (default), or set a custom range within the last 14 days.

4. Sort the Date and time column in ascending or descending order.

5. Click View notification settings and verify or change settings.

6. Ask users to check their user preferences for receiving email notifications. Even when notifications and integrations are configured properly, each user on a Red Hat Hybrid Cloud Console account must configure their own user preferences to receive emails.

Additional resources

- For more information about network and firewall configuration, see Firewall Configuration for accessing Red Hat Insights / Hybrid Cloud Console Integrations & Notifications.
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.