Subscribing to Notifications

The **Subscriptions** page (Settings icon → **Notifications** → **Subscriptions**) lists defined notifications and provides features for editing and creating new ones. Users the appropriate privileges can add and edit notifications. For each e-mail notification subscription, NetMRI sends one e-mail—containing all the events specified in that notification subscription—to each of the specified addresses.

**Note:** The appliance might send multiple email notifications for certain specific issues, one email notification for each device component. Although, the subject of the email seems to be identical for each device component, the body of the email message provides details about the issue for the specific device component.

One syslog entry or SNMP trap appears for each event specified in the notification subscription. Notifications can also summarize over a larger number of related events in the period of time covered by the notification.

**Note:** Summarization is the default for all new notifications.

**Note:** Before creating the first notification, visit the **Settings** icon → **Notifications** → **System Settings** page to configure basic notification settings.

To create a notification subscription, do the following:

1. Click **Settings** icon → **Notifications** → **Subscriptions** to begin creating notifications.
2. Click the **Add Notification** button. The **Add Notification** dialog appears. Here, you select the various elements that comprise a notification, including the notification **Category**, a **Time Window**, and other more-specific information for each notification type.

**Note:** Four **Category** types determine the notification type to be sent out for the subscription. Choosing **Issue**, **Change**, **Job** or **System Alert** determines the type of notification to be attached to the subscription.

3. Choose from the **Time Window** dropdown to specify when notifications are sent. Notifications are sent in response to events within a time range. You may choose one time window for any notification. Choices include the following: 24/7, **Work Hours**, Off Hours, First Shift, Second Shift, Third Shift, and **Weekends**.

4. Select the **Category** of notification to be sent (**Change**, **Issue**, **Job** or **System Alert**).

5. Specify notification details depending on the category selected, based on one of the four procedures: **Defining an Issue Notification**, **Defining a Change Notification**, **Defining a Job Notification** or **Defining a System Alert Subscription**.

NetMRI offers three methods of notification delivery: Email, Syslog and SNMP trap. All types of notifications support any of the three delivery methods.

**Note:** In many fields, you can click a single item, or CTRL+click or SHIFT+click to select multiple items.

6. After defining the category and the specifics for the notification type (New Issue, Change, Job, or System Alert), select the notification **Method**: Email, **SNMP Trap**, or **Syslog**. You then define the content for the subscriber's notification.

   - If you choose **Email**, click **Advanced Settings** and follow the steps in the topic **Defining Global Notification Email Settings**.
   - If you choose **SNMP Trap**, enter one or more IP addresses for trap servers into the **Server(s)** field or accept the configured default. Use commas between each entry if entering more than one destination IP. Save your changes when finished. Also see **Defining Global Notification SNMP Trap Settings**.
   - If you choose **Syslog**, enter one or more IP addresses for Syslog servers into the **Server(s)** field or accept the configured default. Use commas between each entry if entering more than one destination IP. For more information, see **Defining Global Notification Syslog Settings**.

**Note:** You can define a default **Server** value for SNMP Trap notifications and Syslog notifications. You specify the server by an IP address or a DNS host name, or more than one, separated by commas. Do so under **Settings** icon → **Notifications** → **System Settings** and click the **Syslog System Settings** tab or the **SNMP System Settings** tab. The values defined here will auto-populate the subscription's **Server** field. In both cases, the server value is concatenated with the TCP port value.

7. If necessary, edit the **To Email Addresses**: field, by entering one or more delivery email addresses, who should be the personnel for whom receiving these messages is a priority. (The **To User(s)** field is not editable by default.)

8. By default, NetMRI enables the **Summarize** checkbox to allow the recipients to obtain a summary of all related events within the notification time period. This summarization is based upon the **Schedule** over which the notifications are sent. Click **Edit Schedule** to change the frequency: Once, Hourly, Daily, Weekly or Monthly, and choose the timing settings for the desired time period.

9. Click **Save** when finished.
10. Click **Save** to complete the notification. The Subscriptions table refreshes to show the new entry. To edit any notification: Click the **Action** icon and choose **Edit**.

To test any notification: Click the **Action** icon and choose **Test**.

To delete any notification: Click the **Action** icon and choose **Delete**.

**Note:** In all cases, you have the option to Send Clearing Notifications, which is a checkbox on the top right of the Add Notification page. This indicates to the recipient that the issue previously reported on has been cleared. Clearing notifications have a severity of Info.

By default, NetMRI assigns New Issues notifications to All Device Groups and All Interface Groups. When you define New Issues notifications, you can choose the Device Groups and Interface Groups to which the notification applies.

You apply Change and Job notifications to one or more individual device groups. This allows for more granularity in how notifications are sent—a particular notification may only apply to Ethernet switched networks, and thus only be applied to the Switching device group.

When being generated and sent to recipients, Notifications can occupy significant system and network resources. For example, creating a new Subscription under the New Issues category with the setting All Issues without paying attention to scheduling or summarization, or a System Alert notification subscription with a large number of selected alert types, may create a substantial stream of notifications to the recipients in the subscription, and needlessly occupy processing and network resources in NetMRI. Avoid creating subscriptions that apply too broadly to various network phenomena or that are sent too frequently to too many recipients. Check for such issues in the System Messages page (Settings icon -> Notifications -> System Messages). For more information, see System Messages.

The following topics describe the four notification types in greater detail.

### Defining an Issue Notification

New Issue notifications let administrators know when problems are detected by NetMRI during network data collection. (For more information about Issues, see *Evaluating Issues in NetMRI*.)

To define a New Issue notification, do the following:

1. Click **Settings** icon to begin creating notifications.
2. Click **Add Notification**.
3. From the **Category** dropdown, choose Issue.
4. Choose the **Time Window** over which the notification subscription will operate.
5. If necessary, enable the **Send Clearing Notifications** option in the upper right corner. If activated, a notification is sent when an issue covered by the notification is cleared.
6. Choose the **Severity**: Info, Warning or Error.
   - Info, Warning and Error are the three standard NetMRI severity classifications.
7. Choose the **Issues** to trigger the notification. Select multiple issues by holding the Ctrl key or the Shift key while selecting. Selecting **All Issues** automatically enables any issues to generate a notification.
8. Choose one or more **Device Groups** for triggering notifications of specified issues.
9. Choose one or more **Interface Groups** for triggering notifications of specified issues.
10. Choose the **Method** by which admins will receive Job notifications: **Email**, **SNMP Trap** or **Syslog**.
    - For **Email**: select the To **Users** to receive the notification. (Administrators can send notifications to anyone. Non-administrative users can send notifications only to themselves.) Specify additional To **email address(es)** if needed. Separate multiple e-mail addresses by commas.

**Note:** Email notifications also require the correct SMTP servers to be configured in the appliance to support sending the notifications to their destinations. See the *Setting Notification Defaults* topic for more information.

If needed, click **Edit Schedule** to specify a schedule for the summary e-mail notification;

The **Summarize** check box sends a digest email of the system alerts for the selected category, providing a way to reduce email quantities sent to administrators’ inboxes. Deactivate the **Summarize** check box to receive all notifications for each individual system alert.

To manage notification email settings in more detail, click the **Advanced Settings** button to override default settings for sender information, message type, message subject, message content and details. See *Notification Content and Formatting* for information about placeholder variables.

**Note:** If you select Plain Text as the message body, the HTML formatting is erased in the notification email.

- For **SNMP Trap**: override the default Server(s) by entering a new IP address.
- For **Syslog**: Optionally, Override the default Server(s) and Message. See the Notification Content and Formatting topic for information about placeholder variables.

11. Click **Save**.
Defining a Change Notification

Change notifications inform NetMRI administrators about configuration changes and device status changes that take place on the network.

NetMRI also provides the ability to prevent excessive Config Change notifications based on changes in volatile or transient configuration data changes that bear little or no significance in device operation or device management, such as admin password changes.

Filtering of such notifications occurs automatically without user intervention. You can also use an Advanced Setting to specify a list of user accounts that NetMRI can "ignore" when those users commit configuration changes that would otherwise be reported. (For information, see Filtering Change Notifications from User Accounts below.)

To define a Change notification, do the following:

1. Click Settings icon – Notifications –> Subscriptions to begin creating notifications.
2. Click Add Notification.
3. From the Category dropdown, choose Change.
4. In the Change Types section, select one out of six choices (or Ctrl+click to select more than one):
   - All: all types;
   - Admin: changes to the actual configuration files on the device(s);
   - External: changes to the devices in the notification that are carried out by an external source, such as a change to the DNS record on a device;
   - Hardware: Notification of a change in a device’s hardware configuration, such as the removal or addition of a network module or line card;
   - Software: notification of a change in the device’s software/OS version.
5. Choose the Method by which admins will receive Job notifications: Email, SNMP Trap or by Syslog.
   - For Email: select the To Users to receive the notification. (An administrator can send notifications to anyone. Non-administrative users can send notifications only to themselves.)
   - Specify additional To email address(es) if needed. Separate multiple e-mail addresses by commas.

Note: Email notifications also require the correct SMTP servers to be configured in the appliance to support sending the notifications to their destinations. For information, see Setting Notification Defaults.

6. If necessary, click Edit Schedule to specify a schedule for the summary e-mail notification, or deactivate the Summarize check box to receive all notifications for each individual system alert. The Summarize check box sends a digest email of the system alerts for the selected category, providing a way to reduce email quantities sent to administrators' inboxes.
7. To manage notification email settings in more detail: click the Advanced Settings button to override default settings for sender information, message type, message subject, message content and details. For information, see Notification Content and Formatting.
8. For SNMP Trap: override the default Server(s) by entering a new IP address.
9. For Syslog: If necessary, override the default Server(s) and Message. See the Notification Content and Formatting topic for information about placeholder variables.
10. Click Save.

Filtering Change Notifications from User Accounts

You can filter and ignore configuration change notifications executed by automated systems operating with network infrastructure, or filter change notifications resulting from executions of a NetMRI Automated Change Management (ACM) process. These processes often use a designated login. NetMRI can use these logins as signals to filter out any and all Change Notifications while the job executes. This enables the appliance to ignore such messages for Configuration Management purposes.

Network devices affected by such tasks must be configured to send Syslog messages to the NetMRI appliance.

You configure an Advanced Setting to complete this configuration:

1. Click Settings icon – General Settings –> Advanced Settings.
2. In the Configuration Management category, Action Edit for the Config Syslog Change Filter Usernames setting.
3. Enter a comma-delimited list of user names for the automated systems or admin user accounts, such as follows: rsmith,hpnode_1,hpnode_2,cab_admin,grey_goose
4. Click OK when complete.

Defining a Job Notification
Job notifications inform NetMRI administrators when a job they’ve created completes execution, requires approval or gets approved by their administrator. NetMRI generates notifications for both successful job executions and for job failure issues.

To define a Job notification, do the following:

1. Click Settings icon –> Notifications –> Subscriptions to begin creating notifications.
2. Click Add Notification.
3. From the Category dropdown, choose Job.
4. Choose the Job Status: All, Requiring Approval, Approved, or Completed.
5. Choose one or more Device Groups that will trigger notifications of the specified issues.
6. Choose the Method by which admins will receive Job notifications: Email, SNMP Trap or by Syslog.
   - For Email: select the To Users to receive the notification. (Administrators can send notifications to anyone. Non-administrative users can send notifications only to themselves.)
   - Specify additional To email address(es) if needed. Separate multiple e-mail addresses by commas.

Note: Email notifications require the correct SMTP servers to be configured in the appliance to support sending the notifications to their destinations. See the Setting Notification Defaults topic for more information.

- If necessary, click Edit Schedule to specify a schedule for the summary e-mail notification, or deactivate the Summarize check box to receive all notifications for each individual system alert. The Summarize check box sends a digest email of the system alerts for the selected category, providing a way to reduce email quantities sent to administrators' inboxes.
- To manage notification email settings in more detail: click the Advanced Settings button to override default settings for sender information, message type, message subject, message content and details. See Notification Content and Formatting topic for information about placeholder variables.

Note: If you select PlainText as the message body, the HTML formatting is erased in the notification email.

- For SNMP Trap: override the default Server(s) by entering a new IP address.
- For Syslog: If necessary, override the default Server(s) and Message. See the Notification Content and Formatting topic for information about placeholder variables.

7. Click Save.

Defining a System Alert Subscription

Admins can receive notifications for appliance alerts. Such alerts involve occurrences such as maintenance events, updates, reboots, system health issues, and general appliance errors. Alerts generate notifications; in turn, notifications can generate SNMP traps. (For information about system health alerts, see Managing and Tracking System Health.) To define a System Alert notification, do the following:

1. Click Settings icon –> Notifications –> Subscriptions to begin creating notifications.
2. Click Add Notification.
3. From the Category dropdown, choose System Alert.
4. Choose the System Types: (you can select one or more types by CTRL-clicking them):
   - IP phone issues: VoIP messages.
   - System Health types: System Hardware Failure, Software Health Alert, Processing Health Alert, Storage Health Alert, Network Health Alert, Platform Capacity Health Alert, and Collector Connectivity Health Alert.
5. Choose the Method by which admins will receive Job notifications: Email, SNMP Trap or by Syslog.
   - For Email: select the ToUsers to receive the notification. (Administrators can send notifications to anyone. Non-administrative users can send notifications only to themselves.)
   - Specify additional To email address(es) if needed. Separate multiple e-mail addresses by commas.

Note: Email notifications require correct SMTP servers to be configured in the appliance to send notifications to their destinations. See the Setting Notification Defaults topic for more information.

- If necessary, click Edit Schedule to specify a schedule for the summary e-mail notification, or deactivate the Summarize check box to receive all notifications for each individual system alert. The Summarize check box sends a digest email of the system alerts for the selected category, providing a way to reduce email quantities sent to administrators' inboxes.
- To manage notification email settings in more detail: click Advanced Settings to override default settings for sender information, message type, message subject, message content and details. See Notification Content and Formatting and Email Formatting Guidelines for Individual Notifications for more information about placeholder notification variables and email formatting.

Note: If you select Plain Text as the message body, the HTML formatting is erased in the notification email.
For **SNMP Trap**: override the default **Server(s)** by entering a new IP address.

For **Syslog**: if necessary, override the default **Server(s)** and **Message**.

6. Click **Save**.

### Messages for System Alerts

Alert subscriptions use the **System Types** list to define the events that generate notifications. As noted, the General alerts category consists of the following: All Event, User Logins, User Logout, NetMRI Maintenance, Update Information, or General Errors.

The following table lists the alert messages provided by notifications using each alert category.

<table>
<thead>
<tr>
<th>General Alert Categories</th>
<th>Alert Messages</th>
</tr>
</thead>
<tbody>
<tr>
<td>User Logins</td>
<td>Failed login attempt for user User successfully logged in</td>
</tr>
<tr>
<td>User Lockout</td>
<td>User locked out due to excessive failed logins</td>
</tr>
<tr>
<td>NetMRI Maintenance</td>
<td>Background upgrade has aborted with &lt;X&gt; of &lt;Y&gt; tables processed</td>
</tr>
<tr>
<td></td>
<td>Background upgrade has completed with &lt;Y&gt; tables processed</td>
</tr>
<tr>
<td>Update Information</td>
<td>NetMRI Update Installed NetMRI &lt;X&gt; Update(s) Available NetMRI Issue Upgrade Complete</td>
</tr>
<tr>
<td>General Errors</td>
<td>Global config collection is disabled</td>
</tr>
<tr>
<td></td>
<td>Weekly maintenance is disabled</td>
</tr>
<tr>
<td></td>
<td>Infoblox Sync could not export data</td>
</tr>
<tr>
<td></td>
<td>Not polling interface performance data for X</td>
</tr>
<tr>
<td></td>
<td>Rapid polling interface limit exceeded</td>
</tr>
<tr>
<td></td>
<td>Rapid polling interface limit exceeded</td>
</tr>
<tr>
<td></td>
<td>Future iLastChange for device X on interface Y(…)</td>
</tr>
<tr>
<td></td>
<td>Device reboot time may need to be adjusted</td>
</tr>
<tr>
<td>System Hardware Failure</td>
<td>Hardware failure detected for X.Y (depends on data collected from sensors)</td>
</tr>
</tbody>
</table>

For information on System Health alerts, which are a separate category, see [Managing and Tracking System Health](#).