



Event Analytics, Release 12.2.2

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# New and Changed Information

The following table provides an overview of the significant changes up to this current release. The table does not provide an exhaustive list of all changes or of the new features up to this release.

Release Version	Feature	Description
NDFC release 12.2.2	Support for enhanced metrics for predicting the health of an SFP and automatic alerts when optics values exceed the default thresholds defined on the switch	<p>With this feature, you can perform the following:</p> <ul style="list-style-type: none"> <li>• Predict the failure of a small form-factor pluggable (SFP) for Multilayer Distributed Switching (MDS) switches.</li> <li>• View usage data by day, week, month, or year for Rx power, Tx power, temperature, current, and voltage for the SFPs.</li> <li>• View usage trends and receive alerts when optics values exceed default thresholds.</li> </ul> <p>NDFC added a default alarm policy, <b>pm_optics_predict</b>, so alerts are automatically sent out when optics values exceed the default thresholds as defined on the switch.</p> <p>For more information, see <a href="#">Alarms</a>, <a href="#">Alarms Raised</a>, <a href="#">Alarms Cleared</a>, and the "Viewing Performance Information for Optics" section in <a href="#">Add Interfaces for SAN Operational Mode</a>.</p>
NDFC release 12.2.2	Enhanced zone, Fibre Channel Name Server (FCNS), and fabric login (FLOGI) limitations by adding default policies for triggering alarms when the scale percentage exceeds a defined threshold	<p>With this feature, you can view alarms with a default warning severity when zone, FCNS, and FLOGI scale percentages exceed 80%. You can edit the zone, FCNS, and FLOGI scale percentage values by exporting or importing the policies, updating the values, and waiting for the nightly scan to run. Navigate to <b>Analyze &gt; Event Analytics &gt; Alarms</b> and then click on the <b>Alarm Policies</b> tab to view the alarm policies.</p> <p>For more information, see <a href="#">Forwarding Alarms to Registered SNMP Listeners</a>.</p>

# Alarms

This tab displays the alarms that are generated for various categories. This tab displays information such as **ID** (optional), **Severity**, **Failure Source**, **Name**, **Category**, **Acknowledged**, **Creation Time**, **Last Updated** (optional), **Policy**, and **Message**. You can specify the **Refresh Interval** in this tab. You can select one or more alarms and then acknowledge or unacknowledge their status using the **Change Status** drop-down list. In addition, you can select one or more alarms and then click the **Delete** button to delete the alarms.

Beginning with NDFC 12.2.2, NDFC added the default alarm policy, **pm\_optics\_predict**, so that when optics values exceed the default threshold as defined on the switch, alert notifications are sent out automatically. The **pm\_optics\_predict** raised alarms are listed on the **Analyze > Event Analytics > Alarms > Alarms Raised** page.

For more information, see the section "Viewing Performance Information for Optics" in [Add Interfaces for SAN Operational Mode](#).

## Alarms Raised

1. Navigate to **Analyze > Event Analytics > Alarms**.
2. Click the **Alarms Raised** tab to view the alarm policies that were triggered by an alarm.
3. Double-click on the link in the **ID** column to open the **Alarm ID** page for the selected alarm ID.

This page displays more details about the selected alarm ID and also provides a history of the alarms raised for the associated source.

Beginning with NDFC 12.2.2, NDFC added the default alarm policy, **pm\_optics\_predict**, so that when optics values exceed the default threshold as defined on the switch, alert notifications are sent out automatically. The **pm\_optics\_predict** raised alarms are listed on the **Analyze > Event Analytics > Alarms > Alarms Raised** page.


For more information, see the section "Viewing Performance Information for Optics" in [Add Interfaces for SAN Operational Mode](#).

The following table describes the fields that appear on the **Alarms Raised** tab.

Field	Description
<b>ID</b>	Specifies the ID of the alarm.
<b>Severity</b>	Specifies the severity of the alarm.
<b>Source</b>	Specifies the name of the source.
<b>Name</b>	Specifies the name of the alarm.
<b>Message</b>	Displays the message.
<b>Category</b>	Specifies the category of the alarm.
<b>Creation Time</b>	Specifies the time at which the alarm was created.
<b>Updated Time</b>	Specifies the time at which the alarm was updated.
<b>Policy</b>	Specifies the policy of the alarm.

Field	Description
<b>Ack User</b>	Displays the username who acknowledged the alarm.

The following table describes the action items, in the **Actions** menu drop-down list, that appear on the **Alarms Raised** tab.

Action Item	Description
<b>Acknowledge</b>	Select one or more alarms and choose <b>Acknowledge</b> . Allows you to bookmark the alarms and adds ack user name to the <b>Acknowledged</b> column.
<b>Unacknowledge</b>	Select one or more alarms and choose <b>Unacknowledge</b> to remove the bookmarked alarms.   Only acknowledged alarms can be unacknowledged.
<b>Clear</b>	Select one or more alarms and choose <b>Clear</b> to clear the alarm policy manually.  The cleared alarms will be moved to the <b>Alarms Cleared</b> tab.
<b>Delete Alarm</b>	Select one or more alarms and choose <b>Delete</b> to delete the alarm.

## Alarms Cleared

1. Navigate to **Analyze > Event Analytics > Alarms > Alarms Cleared**.

The **Alarms Cleared** tab has the list of alarms that are cleared in the **Alarms Raised** tab. This tab displays information such as **ID**, **Severity**, **Failure Source**, **Name**, **Category**, **Acknowledged**, **Creation Time**, **Cleared At**, **Cleared By**, **Policy**, and **Message**. You can view the cleared alarm details for a maximum of 90 days.

2. You can choose one or more alarms and click **Actions > Delete** to delete the alarms.

The following table describes the fields that appear on the **Alarms Cleared** tab.

Field	Description
<b>ID</b>	Specifies the ID of an alarm.
<b>Status</b>	Indicates the status of the alarm as <b>Cleared</b> .
<b>Source</b>	Specifies the IP address of the source alarm.
<b>Name</b>	Specifies the name of the alarm.
<b>Message</b>	Specifies the CPU utilization and other details of alarm.
<b>Category</b>	Specifies the category of the alarm.
<b>Creation Time</b>	Specifies the time at which the alarm was created.
<b>Cleared Time</b>	Specifies the time at which the alarm was cleared.
<b>Cleared By</b>	Specifies the user who cleared the alarm.

Field	Description
<b>Policy</b>	<p>Specifies the policy of the alarm.</p> <p>Beginning with NDFC 12.2.2, NDFC added the default alarm policy, <b>pm_optics_predict</b>, so that when optics values exceed the default threshold as defined on the switch, alert notifications are sent out automatically. When small form-factor pluggable (SFP) thresholds come back to normal or are below the specified threshold, the raised optic alerts or alarms are cleared automatically and are listed on the <b>Analyze &gt; Event Analytics &gt; Alarms &gt; Alarms Raised</b> page.</p> <p>For more information, see the section "Viewing Performance Information for Optics" in <a href="#">Add Interfaces for SAN Operational Mode</a>.</p>
<b>Ack User</b>	Specifies the acknowledged user role name.

The following table describes the action items, in the **Actions** menu drop-down list, that appear on the **Alarms Cleared** tab.

Action Item	Description
<b>Delete Alarm</b>	Select an alarm and choose <b>Delete</b> to delete the cleared alarm.

## Alarm Policies

To enable alarms in the NDFC SAN controller, perform the following steps:

1. Navigate to **Analyze > Event Analytics > Alarms > Alarm Policies**.
2. Ensure that you check the **Enable external alarms** check box in **Admin > System Settings > Server Settings > Alarm**.

You must restart the SAN controller server for this change to take effect.

## Forwarding Alarms to Registered SNMP Listeners

1. Choose **Admin > System Settings > Server Settings > Alarms**, and ensure that you check the **Enable external alarms** check box. You must restart the NDFC SAN controller server for this change to take effect.
2. Choose **Admin > System Settings > Server Settings > Alarms**, and enter an external port address in the **alarm.trap.listener.address** field.
3. Click **Apply Changes** and restart the NDFC SAN controller.



Ensure that you select the **Forwarding** check box in the **Alarm Policy creation** dialog box to enable forwarding alarms to external SNMP listeners.

The following table describes the fields that appear on the **Analyze > Event Analytics > Alarms > Alarms Policies** page.

Field	Description
<b>Name</b>	<p>Specifies the name of the alarm policy</p> <p>Beginning with NDFC 12.2.2, NDFC added the following default policies for triggering an alarm when zone, FCNS, and FLOGI scale percentages on a switch exceed the defined threshold of 80%:</p> <ul style="list-style-type: none"> <li>• <b>Zone_alarm</b></li> <li>• <b>Fcns_alarm</b></li> <li>• <b>Flogi_alarm</b></li> </ul> <p>NDFC runs a nightly scan at midnight for determining if a zone, FCNS, and FLOGI scale limitation is triggered for raising an alarm.</p> <p>You can export or import a <b>Zone_alarm</b>, <b>Fcns_alarm</b>, and a <b>Flogi_alarm</b> policy as a .txt file, update the scale percentage values, and wait for the nightly scan to see the raised alarms on the <b>Analyze &gt; Event Analytics &gt; Alarms &gt; Alarms Raised</b> page.</p>
<b>Description</b>	Specifies the description of the alarm policy
<b>Status</b>	<p>Specifies the status of the alarm policy:</p> <ul style="list-style-type: none"> <li>• <b>Activated</b></li> <li>• <b>Deactivated</b></li> </ul>
<b>Policy type</b>	<p>Specifies the type of the policy:</p> <ul style="list-style-type: none"> <li>• Device Health Policy</li> <li>• Interface Health Policy</li> <li>• Syslog Alarm Policy</li> <li>• SAN Insights Anomaly</li> <li>• External</li> </ul>
<b>Devices</b>	Specifies the devices to which the alarm policy is applied.
<b>Interfaces</b>	Specifies the interfaces.
<b>Details</b>	Specifies the details of the policy.
<b>External</b>	Specifies if the policy type is a default policy or if it is auto-generated by NDFC.

The following table describes the action items, in the **Actions** drop-down list that appear on the **Analyze > Event Analytics > Alarms > Alarms Policies** page.

Action Item	Description
<b>Create new alarm policy</b>	Choose to create a new alarm policy. For more information, see <a href="#">Create new alarm policy</a> .
<b>Edit</b>	Select a policy and choose <b>Edit</b> to edit the alarm policy.
<b>Delete</b>	Select a policy and choose <b>Delete</b> to delete the alarm policy.

Action Item	Description
<b>Activate</b>	Select a policy and choose <b>Activate</b> to activate and apply the alarm policy.
<b>Deactivate</b>	Select a policy and choose <b>Deactivate</b> to disable and deactivate the alarm policy.
<b>Import</b>	Select to import alarm policies from a .txt file.
<b>Export</b>	<ul style="list-style-type: none"> <li>Click the box next to a specific alarm policy, then click <b>Export</b> to export that alarm policy as a .txt file.</li> <li>Select or deselect all the boxes next to the alarm policies, then click <b>Export</b> to export all the alarm policies as a .txt file.</li> </ul>

You can add alarm policies for the following:

Policy	Description
Device Health Policy	Device health policies enable you to create alarms when Device SNMP Unreachable, or Device SSH Unreachable or when the device peripherals are unavailable. Also, these policies enable you to monitor chassis temperature, CPU, and memory usage.
Interface Health Policy	Interface health policies enable you to monitor Up or Down, Packet Discard, Error, Bandwidth details of the interfaces. By default, all interfaces are selected for monitoring.
Syslog Alarm Policy	A syslog alarm policy defines a pair of syslog messages formats; one which raises the alarm, and one which clears the alarm.
SAN Insights Anomaly Policy	A SAN Insights anomaly policy enables you to create customized alarms to identify issues in the fabric using SAN Insight data.
<b>pm_optics_predict</b>	<p>Beginning with NDFC 12.2.2, NDFC added an external <b>pm_optics_predict</b> alarm policy, so that when optics values exceed the default threshold as defined on the switch, alert notifications are sent out automatically. You cannot modify the <b>pm_optics_predict</b> alarm policy.</p> <p>For more information, see the section "Viewing Performance Information for Optics" in <a href="#">Add Interfaces for SAN Operational Mode</a>.</p>

From Cisco Nexus Dashboard SAN Controller Release 12.1.2e, you can modify or activate or use data of pre-provisioned SAN Insights anomaly policies that are in **Not Active** state by default.

## Create new alarm policy

You can add alarm policies for the following:

- Device Health Policy
- Interface Health Policy
- Syslog Alarm Policy
- SAN Insights Anomaly Policy

After you create a new alarm policy, in the **Alarm Policies** tab, click **Refresh** to view the newly-created alarm policy.



## Device Health Policy

Device health policies enable you to create alarms when certain conditions are met. By default, all devices are selected for monitoring.

- **Policy Name:** Specify a name for the policy. It must be unique.
- **Description:** Specify a brief description for the policy.
- **Forwarding:** You can forward alarms to registered SNMP listeners in Cisco Nexus Dashboard Fabric Controller . From the Web UI, choose **Admin > System Settings > Server Settings > Events**.



Ensure that you select Forwarding check box while configuring alarm policies to forward alarms to an external SNMP listener.

- **Email:** You can forward alarm event emails to recipients when an alarm is created, cleared or when the severity is changed. From Cisco Nexus Dashboard Fabric Controller Web UI, choose **Admin > System Settings > Server Settings > Events**. Configure the SMTP parameters, click **Save**, and restart Cisco Nexus Dashboard Fabric Controller services.
- Specify the CPU utilization parameters, memory utilization parameters, and environmental temperature parameters.
- **Device Availability:** Device health policies enable you to create alarms in the following situations:
  - **Device Access:** When device SNMP or device SSH is unreachable.
  - **Peripherals:** When fan, power supply, or module is unreachable.

For detailed trap OID definitions, refer to <https://snmp.cloudapps.cisco.com/Support/SNMP/do/BrowseOID.do>.

Also, these policies enable you to monitor chassis temperature, CPU, and memory usage.

Select the devices for which you want to create policies. Specify the policy name, description, CPU Utilization parameters, Memory Utilization parameters, Environment Temperature parameters, device availability, and device features.

## Interface Health Policy

Interface health policies enable you to monitor the interface status, packet discards, errors and utilization details of the interfaces. By default, all interfaces are selected for monitoring.

Select the devices for which you want to create policies and then specify the following parameters:

- **Policy Name:** Specify a name for the policy. It must be unique.
- **Description:** Specify a brief description for the policy.
- **Forwarding:** You can forward alarms to registered SNMP listeners in Cisco Nexus Dashboard Fabric Controller by configuring sender and recipient email addresses in **Admin > System Settings > Server Settings > Alarms** tab.



Ensure that you select **Forwarding** check box while configuring alarm policies to forward alarms to an external SNMP listener.

- **Email:** You can forward alarm event emails to recipients when an alarm is created, cleared or when the severity is changed. From Cisco Nexus Dashboard Fabric Controller Web UI, navigate to **Admin > System Settings > Server Settings > SMTP**, configure the SMTP parameters and restart Cisco Nexus Dashboard Fabric Controller services.
- **Linkstate:** Choose linkstate option to check for the interface link status. You can generate an alarm whenever a link is down and clear the alarms when the link is up.
- **Bandwidth (In/Out):** Allows you to set the maximum bandwidth allowed in inbound and outbound directions. The system generates alarms when the bandwidth exceeds the specified values.
- **Interface Power (Rx/Tx):** Allows you to configure low warning thresholds for Tx Power and Rx Power. The system generates alarms when the threshold values drop below the configured values. The interfaces are monitored every 15 minutes.
- **Interface Current:** Allows you to configure low warning thresholds for current. The system generates alarms when the threshold values drop below the configured values. The interfaces are monitored every 15 minutes.
- **Interface Voltage:** Allows you to configure low warning thresholds for voltage. The system generates alarms when the threshold values drop below the configured values. The interfaces are monitored every 15 minutes.
- **Inbound Errors:** Allows you to set thresholds for the number of inbound errors that are discarded after which it generates an alarm.
- **Outbound Errors:** Allows you to set thresholds for the number of outbound errors that are discarded after which it generates an alarm.
- **Inbound Discards:** Allows you to set thresholds for the number of inbound packets that are discarded after which it generates an alarm.
- **Outbound Discards:** Allows you to set thresholds for the number of outbound packets that are discarded after which it generates an alarm.

## Syslog Alarm

Syslog Alarm Policy defines a pair of Syslog messages formats; one which raises the alarm, and one which clears the alarm.

Select the devices for which you want to create policies and then specify the following parameters:

- **Devices:** Define the scope of this policy. Select individual devices or all devices to apply this policy.
- **Policy Name:** Specify the name for this policy. It must be unique.
- **Description:** Specify a brief description for this policy.
- **Forwarding:** You can forward alarms to registered SNMP listeners in SAN Controller. From Web UI, choose **Admin > System Settings > Server Settings > Events**.



Ensure that you select **Forwarding** check box in Alarm Policy creation dialog window to enable forwarding alarms to external SNMP listener.

- **Email:** You can forward alarm event emails to recipient when alarm is created, cleared or severity changed. From SAN Controller Web UI, choose **Admin > System Settings > Server Settings > Events**. Configure the SMTP parameters, click **Save**, and restart SAN Controller services.

- Severity: Define the severity level for this syslog alarm policy. Choices are: Critical, Major, Minor, and Warning.
- Identifier: Specify the identifier portions of the raise & clear messages.
- Raise Regex: Define the format of a syslog raise message. The syntax is as follows: Facility-Severity-Type: Message
- Clear Regex: Define the format of a syslog clear message. The syntax is as follows: Facility-Severity-Type: Message

The Regex definitions are simple expressions but not a complete regex. Variable regions of text are noted using \$(LABEL) syntax. Each label represents a regex capture group (.), which corresponds to one or more characters. The variable texts found in both raise and clear messages are used to associate the two messages. An Identifier is a sequence of one or more labels that appear in both messages. An Identifier is used to match a clear syslog message to the syslog message that raised the alarm. If the text appears only in one of the messages, it can be noted with a label and exclude it from the identifier.

**Example:** A policy with "Value": "ID1-ID2" ,

```
"syslogRaise": " SVC-5-DOWN: $(ID1) module $(ID2) is down $(REASON)"
"syslogClear": " SVC-5-UP: $(ID1) module $(ID2) is up."
```

In the example, ID1 and ID2 labels can be marked as an identifier to find the alarm. This identifier will be found in corresponding syslog messages. Label "REASON" is in the raise but not in the clear message. This label can be excluded from the identifier, as it has no impact on the syslog message to clear the alarm.

*Example 1*

Identifier	ID1-ID2
Raise Regex	ETHPORT-5-IF_ADMIN_UP: Interface Ethernet15/1 is admin up.
Clear Regex	ETHPORT-5-IF_DOWN_NONE: Interface Ethernet15/1 is down (Transceiver Absent)

In the above example, the regex expressions are part of the syslog messages that appear in the terminal monitor.

*Example 2*

Identifier	ID1-ID2
Raise Regex	ETH_PORT_CHANNEL-5-PORT_DOWN: \$(ID1): \$(ID2) is down
Clear Regex	ETH_PORT_CHANNEL-5-PORT_UP: \$(ID1): \$(ID2) is up

*Example 3:*


Identifier	ID1-ID2
Raise Regex	ETHPORT-5-IF_SFP_WARNING: Interface \$(ID1), High Rx Power Warning
Clear Regex	ETHPORT-5-IF_SFP_WARNING: Interface \$(ID1), High Rx Power Warning cleared

### SAN Insights Anomaly Policy

From Cisco Nexus Dashboard SAN Controller Release 12.0(1), a new policy type SAN Insights anomaly policy is added. You can customize this policy type to identify issues. You can also create an alarm policy based on the specific flows to retain per interval data for analysis. If the selected flow matches an alarm policy, maintain the flow based on the parameters defined by the policy.

1. Choose **Analyze > Event Analytics > Alarms**.
2. Choose **Alarm Policies** in the **Alarms** tab.
3. Choose **Actions > Create new alarm policy**.
4. Click the **SAN Insights Anomaly Policy** radio button.
5. Enter the necessary field values as described in the following table.

Field	Description
<b>Policy Name</b>	Specify the name for the alarm policy. It must be unique.
<b>Description</b>	Specify a brief description of the alarm policy.
<b>Forwarding</b>	Check this checkbox to enable forwarding of alarms to an external Simple Network Management Protocol (SNMP) listener.
<b>Email</b>	Check this checkbox to send email updates on this alarm policy to an email id.
<b>Capture Time</b>	Click the time in hours from the drop-down list to define <b>Capture Time</b> .  Specifies the length of time to capture per-interval data for each flow matching the given alarm policy.
<b>Retention Time</b>	Choose the time from the drop-down list to define the <b>Retention Time</b> .  Specifies the length of time to keep the data before it is deleted.

Field	Description
<b>Analysis Level</b>	<p>Click the interval from the drop-down list to define the <b>Analysis Level</b>.</p> <p>Specifies which aggregation of flow data must be checked for the given policy. Policy types such as abort or failures should have logic to catch these failures instantly, so you can select the analysis level as an interval. Some data policy types can be considered as anomaly only when the anomaly is sustained above the threshold value for a specific amount of time. For example, a momentary Exchange Completion Time (ECT) or Data Access Latency (DAL) spike in level is not alarming, but if that same spike level is continued for a period (five minutes or one hour), then it must be investigated.</p>
<b>Severity</b>	<p>Click the severity level from the drop-down list to define the <b>Severity</b> of the alarm policy.</p>
<b>Match Rules</b>	<p>Click <b>Add new rule</b> to define a new match rule.</p> <p>You need one or more match rules to describe the matching traffic. You can compare any of the telemetry data fields to another field or to a value that you define. Each flow matching all of the match rules generates an alarm (up to the limit defined in <b>Admin &gt; System Settings &gt; Server Settings</b>).</p> <div style="display: flex; align-items: center;">  <ul style="list-style-type: none"> <li data-bbox="1046 1335 1426 1480">▪ You can define one or more new rules and match criteria to identify a flow and create a new policy.</li> <li data-bbox="1046 1509 1426 1688">▪ All policies are matched against each ITL/ITN flow record streamed to the receiver from the switches.</li> </ul> </div>

Field	Description
<b>Compare Source</b>	Click a type of telemetry data for comparison from the drop-down list for matching rules. For example, if you want to check for a read ECT value of a particular host enclosure in a switch, if the ECT value is more than a particular value, create a SAN Insights alarm to monitor the value. You can monitor one particular parameter, and you can create a corresponding alarm if the traffic matches the rule you created.
<b>Operator</b>	Click an operator from the drop-down list for comparing the telemetry data.
<b>Compare To</b>	Click <b>Custom Value</b> if you want to compare telemetry data to a custom value that you define.
<b>Compare Value</b>	Enter a comparison value if you clicked <b>Custom Value</b> .

6. You can view the created alarms in the **Alarms** tab.
7. Click **Create SAN Insights Anomaly Policy** to create the alarm policy.

# Events

This tab displays the events that are generated for the switches. This tab displays information such as Ack, Acknowledged user, Group, Switch, Severity, Facility, Type, Count, Last Seen, and Description. You can select one or more events and then acknowledge or unacknowledge their status using the Change Status drop-down list. In addition, you can select one or more alarms and then click the Delete button to delete them. If you want to delete all events, click the Delete All button.

The following table describes the fields that appear on **Analyze > Event Analytics > Events**.

Field	Description
Group	Specifies the Fabric
Switch	Specifies the hostname of the switch
Severity	Specifies the severity of the event
Facility	Specifies the process that creates the events.  The event facility includes two categories: NDFC and syslog facility. Nexus Dashboard Fabric Controller facility represents events generated by Nexus Dashboard Fabric Controller internal services and SNMP traps generated by switches. Syslog facility represents the machine process that created the syslog messages.
Type	Specifies how the switch/fabric are managed
Count	Specifies the number of times the event has occurred
Creation Time	Specifies the time when the event was created
Last Seen	Specifies the time when the event was run last
Description	Specifies the description provided for the event
Ack	Specifies if the event is acknowledged or not

The following table describes the action items, in the **Actions** menu drop-down list, that appear on **Analyze > Event Analytics > Events**.

Action Item	Description
Acknowledge	Select one or more events from the table and choose <b>Acknowledge</b> icon to acknowledge the event information for the fabric. After you acknowledge the event for a fabric, the acknowledge icon is displayed in the Ack column next to the Group.
Unacknowledge	Select one or more events from the table and choose <b>Unacknowledge</b> icon to acknowledge the event information for the fabric.

Action Item	Description
Delete	Select an event and choose <b>Delete</b> to delete the event.
Add Suppressor	Select an event and choose <b>Add Suppressor</b> to add a rule to the event. You can provide name to the rule. Using the <b>Scope</b> options, you can add this rule to all the Fabrics, or particular elements or all elements.
Event Setup	Allows you to setup new event. For more information, see <a href="#">Event Setup</a> .

## Event Setup

To setup an event using the Cisco Nexus Dashboard Fabric Controller Web UI, perform the following steps:

1. Choose **Analyze > Event Analytics** and click on the **Events** tab.
2. From the **Actions** drop-down list, select **Event Setup**. The **Receiver** tab displays the following details:
  - o **Syslog Receiver enabled:** Displays the status of the syslog server.
  - o **SNMP Trap Receiver:** Displays the details of SNMP traps received, processed and dropped.
  - o **Syslog Receiver:** Displays the details of syslog messages received, processed and dropped.



- Ensure that you allow access to the SMTP service from the cisco-ndfc-dcnm-syslog-trap interface for forwarding of event email notifications. The cisco-ndfc-dcnm-syslog-trap interface also provides access to the switches for SNMP queries. For more information, see the section "Configuring Persistent IPs" in [Nexus Dashboard Infrastructure Management](#).
- The cisco-ndfc-dcnm-syslog-trap interface also provides access to the switches for SNMP. Ensure that you allow access to the SNMP destination port 161 on the switches for the cisco-ndfc-dcnm-syslog-trap interface. For more information, see the section "Communication Ports for Fabric Controller" in [Cisco Nexus Dashboard and Services Deployment and Upgrade Guide](#).

3. Perform the following steps to enable switches to automatically configure syslog and to send syslog messages to the NDFC server:
  - a. Ensure that Cisco Fabric Services (CFS) is disabled on all the switches.
  - b. In Cisco Nexus Dashboard Fabric Controller, choose **Admin > System Settings > Server Settings**.
  - c. Click on the **Events** tab and check the **Auto Registration of syslogs on Switch** check box.

By default, this feature is disabled. You can view the syslog messages in the **Analyze > Event Analytics > Events** page. NDFC collects syslog messages from the server every 5 mins.



4. Navigate to the **Sources** tab, to view a list of fabrics and its associated switches. The **Sources** tab displays all the fabrics and the associated switches in tabular format. It also displays if traps and syslog have been configured on the switches.
5. Perform the following steps to create rules for forwarding email notifications or traps for events:

Cisco Nexus Dashboard Fabric Controller Web UI forwards fabric events through email or SNMPv1 or SNMPv2c traps. Some SMTP servers may require adding authentication parameters to the emails that are sent from Nexus Dashboard Fabric Controller to the SMTP servers.

- a. Ensure that you have configured SMTP parameters before configuring rules for forwarding event notifications through emails. To verify SMTP configuration, navigate to **Admin > System Settings > Server Settings > SMTP** and verify that you have configured the required fields.
- b. To enable events forwarding, choose **Admin > System Settings > Server Settings > Events** and configure the fields as described in the following table.

*Configure Events Forwarding*

Field	Description
<b>Enable Event forwarding</b>	Check the checkbox to enable events forwarding feature.
<b>Email Forwarding From Email List</b>	Specifies the email address from which the forwarding messages arrive.
<b>Snooze Event Forwarding</b>	Snoozes an event from forwarding for the given time range.
<b>Maximum Number of Repeats in Event Forwarding</b>	Stops forwarding an event after the specified time. 0 indicates unlimited time.
<b>Maximum Number in Events/Traps/Syslog Queue</b>	Specifies the maximum number in the queue before dropping the incoming events/traps/syslog.

- c. To configure rules, choose **Analyze > Event Analytics**.
- d. Navigate to the **Forwarding** tab and choose **Actions > Add Rule** and configure the fields as described in the following table.

*Configure Rules*

Field	Description
<b>Forwarding Method</b>	Choose one of the forwarding methods: <ul style="list-style-type: none"> <li>• <b>E-Mail</b></li> <li>• <b>Trap</b></li> </ul>
<b>Email Address</b>	This field appears if you select <b>E-mail</b> as the forwarding method. Enter an email address for forwarding the event notifications.

Field	Description
<b>Address</b>	This field appears if you select <b>Trap</b> as the forwarding method. Enter the IP address of the SNMP trap receiver. You can either enter an IPv4 or IPv6 address or a DNS server name.
<b>Port</b>	Enter the port to which the traps are forwarded.
<b>Forwarding Scope</b>	Maximum number in queue before dropping the incoming events/traps/syslog messages.
<b>Fabric</b>	Select <b>All Fabrics</b> or a specific fabric for notification.
<b>VSAN Scope</b>	For SAN Installer, select the VSAN scope. You can either choose <b>All</b> or <b>List</b> .
<b>VSAN List</b>	If you select <b>List</b> , provide the list of VSANs for notification.
<b>Source</b>	<p>Select <b>DCNM</b> or <b>Syslog</b>. If you select <b>DCNM</b>, do the following:</p> <ol style="list-style-type: none"> <li>1. From the <b>Type</b> drop-down list, choose an event type.</li> <li>2. Check the <b>Storage Ports Only</b> check box to select only the storage ports. This check box is enabled only for port related events.</li> </ol> <p>If you select <b>Syslog</b>, do the following:</p> <ol style="list-style-type: none"> <li>1. In the <b>Facility</b> list, select the syslog facility.</li> <li>2. In the <b>Type</b> field, enter the syslog type.</li> <li>3. In the <b>Description Regex</b> field, enter a description that matches with the event description.</li> </ol>

- e. From the **Minimum Severity** drop-down list, select the severity level of the messages to receive.

The traps that are transmitted by Cisco Nexus Dashboard Fabric Controller correspond to the severity type. A text description is also provided with the severity type.

```

trap type(s) = 40990 (emergency)
40991 (alert)
40992 (critical)
40993 (error)
40994 (warning)

```

```
40995 (notice)
40996 (info)
40997 (debug)
textDescriptionOid = 1, 3, 6, 1, 4, 1, 9, 9, 40999, 1, 1, 3, 0
```

f. Click **Add Rule**.

6. Perform the following steps to create rules for suppressing events:

Nexus Dashboard Fabric Controller allows you to suppress specified events based on user-specified rules. Such events will not be displayed on the Nexus Dashboard Fabric Controller Web UI and SAN Client. The events will neither be added to the Nexus Dashboard Fabric Controller database, nor forwarded via email or as SNMP traps.

You can view, add, modify, and delete rules from the table. You can create a rule from the existing events. Select an existing event as the template and open the **Add Rule** window by navigating to **Analyze > Event Analytics > Events** page, select the event and choose **Actions > Add Suppressor**. The details are automatically ported from the selected event in the events table to the fields of the **Add Rule** window.

a. In the **Name** field, enter a name for the rule.

b. In the **Scope** field, select one of the following options - **SAN, Port Groups** or **Any**.

In the **Scope** field, the LAN/SAN groups and the port groups are listed separately. For SAN and LAN, select the scope of the event at the fabric or group or switch level. You can only select groups for port group scope. If use select **Any** as the scope, the suppression rule is applied globally.

c. In the **Facility** field, enter the name or choose from the SAN/LAN switch event facility list.

If you do not specify a facility, a wildcard is applied.

d. In the **Type** field, enter the event type.

If you do not specify the event type, wildcard is applied.

e. In the **Description Matching** field, specify a matching string or regular expression.

The rule matching engine uses regular expression that is supported by Java Pattern class to find a match against an event description text.

f. Check the **Active Between** check box and select a valid time range during which the event is suppressed.

By default, the time range is not enabled.



In general, you must not suppress accounting events. Suppression rule for Accounting events can be created only for certain situations where accounting events are generated by actions of Nexus Dashboard Fabric Controller or switch software. For example, 'sync-snmp-password' AAA syslog events are automatically generated during the password synchronization between Nexus Dashboard Fabric Controller and managed

switches. To suppress accounting events, navigate to **Analyze > Event Analytics > Events** page, select the event and choose **Actions > Add Suppressor**.

g. Click **Add Rule**.

# Accounting

You can view the accounting information on Cisco Nexus Dashboard Fabric Controller Web UI.

The following table describes the fields that appear on **Analyze > Event Analytics > Accounting**.

Field	Description
Source	Specifies the source
User Name	Specifies the user name.
Time	Specifies the time when the event was created
Description	Displays the description.
Group	Specifies the name of the group.

The following table describes the action items, in the **Actions** menu drop-down list, that appear on **Analyze > Event Analytics > Accounting**.

Action Item	Description
Delete	Select a row and choose <b>Delete</b> to delete accounting information from the list.

# Remote Clusters

This tab displays the clusters and the number of Fabrics in each cluster in your setup.

Click on the Cluster Name to see the summary information. You can click on the launch icon to view the detailed summary of the Cluster.

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