

Managing Alert Consolidation in ViPR SRM 3.5

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Abstract

Learn about alert consolidation in EMC ViPR SRM 3.5. Details include configuring thresholds and notifications as well as specific configuration information for supported Brocade and Cisco devices and EMC VMAX and VNX arrays.

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Enabling threshold alerts

By default, all out-of-box alert definitions for consolidated alerts are in disabled state. If you want ViPR SRM to generate threshold alerts based on metric data consolidated from external sources, you must enable the threshold alert definitions for each source. You can use the default alert definitions available, or create a custom definition and then enable it.

Procedure

1. Click **Administration**.
2. Under the Modules area, click **Alerting**.
3. In the Alerting Frontend, click **Local Manager > Alert definitions**.
4. Click the **<Source>**. For example, Brocade FC switch for Brocade switches.
5. In the Alert definitions table, click the appropriate alert definition.
6. Click **Enable**.

Disabling threshold alerts

After enabling the generation of threshold alerts based on the metric data consolidated from external sources, you can stop it any time.

Procedure

1. Click **Administration**.
2. Under the Modules area, click **Alerting**.
3. In the Alerting Frontend, click **Local Manager > Alert definitions**.
4. Click the **<Source>**. For example, Brocade FC switch for Brocade switches.
5. In the Alert definitions table, click the appropriate alert definition.
6. Click **Disable**.

Customizing an out-of-box threshold alert definition

You can customize the filters that ViPR SRM uses to generate threshold alerts based on the metric data collected.

Procedure

1. Click **Administration**.
2. Under the Modules area, click **Alerting**.
3. In the Alerting Frontend window, click **Local Manager > Alert definitions > <Source>**.
4. Click the default threshold alert definition to modify.
5. Double-click the required filter components and make suitable changes.

Notifications fail if you modify the adapter Name filter and sequence of the trap content in the Filtered entry and SNMP Trap action components, respectively.

6. Click **Save**.
7. Click **Save and enable**.
8. Click **OK**.

Creating a custom threshold alert definition for out-of-box SolutionPack support

To ensure that you have all the necessary alert workflow in your custom threshold alert definition, copy the default action components from the out-of-box alert definitions.

Procedure

1. Click **Administration**.
2. Under Modules, click **Alerting**.
3. In Alerting Frontend, click **Local Manager > Alert definitions > <Source>**.
4. Click the appropriate alert definition.
5. Click the **<Source>** to which the alert definition should apply.
6. Click and type a suitable description for your alert definition.
7. Click **OK**.
8. Double-click the required filter components and make suitable changes.

Notifications fail if you modify the adapter Name filter and sequence of the trap content in the Filtered entry and SNMP Trap action components, respectively.

9. If you need to add new components, drag and drop them from the component list beside the whiteboard.
10. Add appropriate filters and link the component connectors to other relevant components.
11. Click **Save**.
12. Click **Save and enable**.
13. Click **OK**.

Results

The new alert definition appears in the definitions list for the source.

Reconfiguring the Alert-Consolidation SolutionPackBlock

You must reconfigure the Alert-Consolidation SolutionPackBlock for ViPR SRM to successfully forward alert notification as emails and SNMP traps. This procedure updates the appropriate configuration files and restarts the Alerting service.

Procedure

1. Click **Administration > Centralized Management > SolutionPacks > Independent SolutionPackBlocks**.
2. In the Alert-Consolidation (Primary Backend) instance row, click the pencil icon.
3. In the SolutionPack Reconfiguration window that opens, select **Enable Alert**

Notification

4. Edit the Host and Port fields, if required.
5. Click **Reconfigure**.

Enabling the Alert Consolidation Adapter for consolidated alert notifications

When you enable the relevant alert definitions, the Alert Consolidation Adapter must be in the default enabled state to allow the suite to successfully forward consolidated alerts as email or SNMP trap notifications. For some reason, if the adapter is disabled, enable it.

Procedure

1. Click **Administration**.
2. Under the Modules area, click **Alerting**.
3. In the Alerting Frontend window, click **Local ManagerAdapters**.
4. In the Adapters table, click **Alert Consolidation Adapter**.

If you modify the pre-defined properties and port values of the adapter, notifications fail.

5. Click **Enable**.

Configuring the alert definitions for notification of consolidated alerts

You must specify the recipient details for both email and trap notifications in the alert definitions before enabling them.

Procedure

1. Click **Administration**.
2. Under the Modules area, click **Alerting**.
3. In the Alerting Frontend window, click **Local Manager > Alert definitions**.
4. Click one these out-of-box alert definitions for notifications or your custom notification definition:
 - Alert Consolidation Email Notification
 - Alert Consolidation Trap Notification
5. Double-click the action components and add the configuration details:

Table 1. Mandatory configurations for email and trap alert notifications

Alert definition	Action component	Mandatory configuration	Description
Alert Consolidation Email Notification	Mail	To	The alert notification recipient's email address. The email address is set in Administration > GLOBAL SETTINGS.
Alert Consolidation Trap Notification	SNMP Trap	Host Port	The trap destination IP address. The default port is 162. You can modify it, if required.

Notifications fail if you modify the adapterName filter and sequence of the trap content in the Filtered entry and SNMP Trap action components, respectively.

6. Click **Test action** to ensure that you have specified the right information.
7. Click **Save**.

Enabling email notifications for consolidated alerts

By default, alert definitions for consolidated alerts are in disabled state. After configuring the email destination in the alert definition, you must enable it. ViPR SRM immediately starts forwarding email notifications for consolidated alerts to the specified recipients.

Procedure

1. Click **Administration**.
2. Under the Modules area, click **Alerting**.
3. In Alerting Frontend, click **Local Manager > Alert definitions**.
4. In the Alert definitions table, click **Alert Consolidation Email Notification**, or your custom alert definition.
5. Click **Enable**.

Enabling SNMP trap notifications for consolidated alerts

By default, alert definitions for consolidated alerts are in disabled state. After configuring the SNMP trap destination in the alert definition, you must enable it. ViPR SRM immediately starts forwarding SNMP v1 trap notifications for the consolidated alerts to the specified trap destination.

Procedure

1. Click **Administration**.
2. Under the Modules area, click **Alerting**.
3. In Alerting Frontend, click **Local Manager > Alert definitions**.
4. In the Alert definitions table, click **Alert Consolidation Trap Notification**, or your custom alert definition.
5. Click **Enable**.

Disabling email notifications for consolidated alerts

After enabling the generation of email notifications for consolidated alerts, you can disable it any time you choose. ViPR SRM immediately stops forwarding consolidated alerts as email notifications.

Procedure

1. Click **Administration**.
2. Under the Modules area, click **Alerting**.
3. In the Alerting Frontend window, click **Local Manager > Alert definitions**.
4. In the Alert definitions table, click **Alert Consolidation Email Notification**, or your custom alert definition.
5. Click **Disable**.

Disabling SNMP trap notifications for consolidated alerts

After enabling the generation of SNMP trap notifications for consolidated alerts, you can disable it at any time. ViPR SRM immediately stops forwarding consolidated alerts as SNMP v1 trap notifications.

Procedure

1. Click **Administration**.
2. Under the Modules area, click **Alerting**.
3. In the Alerting Frontend window, click **Local Manager > Alert definitions**.
4. In the Alert definitions table, click **Alert Consolidation Trap Notification**, or your custom alert definition.

5. Click **Disable**.

Customizing an out-of-box alert definition for notification of consolidated alerts

You can customize the out-of-box alert definitions, Alert Consolidation Email Notification and Alert Consolidation Trap Notification that ViPR SRM uses to generate notifications for consolidated alerts.

Procedure

1. Click **Administration**.
2. Under the Modules area, click **Alerting**.
3. In the Alerting Frontend window, click **Local Manager > Alert definitions**.
4. Click one of these default alert definitions:
 - Alert Consolidation Email Notification
 - Alert Consolidation Trap Notification
5. Click **Edit**.
6. In the alert definition whiteboard, double-click the action component and make suitable changes to the action component, including these mandatory configuration details.

Notifications fail if you modify the adapterName filter and sequence of the trap content in the Filtered entry and SNMP Trap action components, respectively.

7. Click **Test action** to ensure that you have specified the right information.
8. Click **Save**.
9. Click **Save and enable** to immediately start forwarding notifications.
10. Click **OK**.

Table 2. Mandatory configurations for email and trap alert notifications

Alert definition	Action component	Mandatory configuration	Description
Alert Consolidation Email Notification	Mail	To	The alert notification recipient's email address. The email address is set in Administration > GLOBAL SETTINGS.
Alert Consolidation Trap Notification	SNMP Trap	Host Port	The trap destination IP address. The default port is 162. You can modify it, if required.

Creating a custom alert definition for notification of consolidated alerts

In order to ensure that you have all the necessary alert workflow in your custom alert definition for notifications, copy the default action components from the out-of-box alert definitions.

Procedure

1. Click **Administration**.
2. Under the Modules area, click **Alerting**.
3. In the Alerting Frontend window, click **Local Manager > Alert definitions**.
4. Click one of these out-of-box notification alert definition, and then click :
 - Alert Consolidation Email Notification
 - Alert Consolidation Trap Notification
5. Click the appropriate location in **Local Manager > Alert definitions**.
6. Type a suitable description for your alert definition.
7. Click **OK**.
8. Double-click the required filter components and make suitable changes.

Table 3. Mandatory configurations for email and trap alert notifications

Alert definition	Action component	Mandatory configuration	Description
Alert Consolidation Email Notification	Mail	To	The alert notification recipient's email address. The email address is set in Administration > GLOBAL SETTINGS.
Alert Consolidation Trap Notification	SNMP Trap	Host Port	The trap destination IP address. The default port is 162. You can modify it, if required.

Notifications fail if you modify the adapterName filter and sequence of the trap content in the Filtered entry and SNMP Trap action components, respectively.

9. If you need to add new components, drag and drop them from the component list beside the whiteboard.
10. Add appropriate filters and link the component connectors to other relevant components.
11. Click **Save**.
12. Click **Save and enable**.
13. Click **OK**.

Results

The new alert definition appears in the definitions list.

Configuring Brocade switches for alert consolidation

Use this procedure to configure forwarding of alert traps (SNMP v1) from Brocade switches to the suite.

Procedure

1. Log into the Brocade FC switch as the administrator.
2. Type **snmpConfig —set snmpv1**, and press Enter.
3. Type the following details, when prompted:

Option	Input
Community	[public]
Trap recipient's IP address	The SRM Suite trap recipient IP which, in a single vApp installation is the SRM Suite IP, and in a distributed environment, is the suite's Backend IP.
Trap recipient severity level	(0..5)
Trap recipient port	2041, which is the SRM Suite trap listening port.

4. If you have multiple Brocade FC switches in your storage environment, repeat this procedure on each switch.

Configuring Cisco switches for alert consolidation

Use this procedure to configure forwarding of alert traps (SNMP v1) from Cisco FC switches to the suite.

Procedure

1. Log into the Cisco FC switch as the administrator.
2. To enter the global configuration mode, at the terminal prompt, type **# config**, and press Enter. Cisco documentation provides more information on the global configuration mode.
3. Type **snmp-server host <trap recipient IP> traps <SNMP trap version> <Community String> udp-port <trap listening port >**, and press Enter.

In the command syntax:

Syntax element	Input
<trap recipient IP>	In a single vApp installation is the SRM Suite IP, and in a distributed environment, is the suite's Backend host IP.
<SNMP trap version>	version 1
<Community String>	public
<trap listening port >	2041 , which is the SRM Suite trap listening port.

Example: snmp-server host 10.247.24.190 traps version 1 public udpport **2041**

4. If you have multiple Cisco FC switches in your storage environment, repeat this procedure on each switch.

How to configure VMAX arrays for consolidation of health alerts

Use this procedure to configure forwarding of health alert traps (SNMP v1) from VMAX arrays to ViPR SRM. VMAX performance alerts are collected using the discovery data collection configuration.

Procedure

1. Log into Solutions Enabler on the array provider host as an administrator.
2. Navigate to the **daemon_options** file in the **C:\Program Files\EMC\SYMAPI\config** directory.
3. In the parameter section **SNMP_TRAP_CLIENT_REGISTRATION**:
 - Uncomment the line **storevntd:SNMP_TRAP_CLIENT_REGISTRATION**
 - Add the SRM Suite trap recipient IP to the trap filter. The trap recipient IP is the Backend host IP.
 - The syntax is **<IP>,<port>,<filter>,<state>**, where **<filter>** is the filtering level for trap forwarding defined in the FCMGMT-MIB file. Example: **10.31.90.148, 2041,10,ACTIVE**
4. In the parameter section **LOG_EVENT_TARGETS**, uncomment the line **storevntd:LOG_EVENT_TARGETS = snmp file**.
5. To identify the arrays from which traps should be forwarded to the suite, type **symcfg list**, and press Enter.
6. For each array that should forward alert traps to SRM Suite:
 - Type **symcfg list**, and press Enter.
 - In the parameter section **LOG_SYMMETRIX_EVENTS**, specify the appropriate event categories in the format:
sid=<SYM serial number>, <event category 1>, <eventcategory 2>

Example

```
SID=000194900854, disk, device, device pool,director, srdf consistency  
group, srdfa s ession, srdf link, srdf system, service processor,  
environmental, diagnostic, checksum, status, events, array subsystem,  
groups, optimizer ;\
```

7. To reload the changes to the daemon_options file, type **stordaeomon actionstorevntd -cmd reload**, and press Enter.
8. Ensure that the storevntd Event Daemon is running on the provider host.
9. If you have multiple VMAX array provider hosts in your storage environment, repeat this procedure on each array provider host.

How to configure VNX arrays for consolidation of alerts

Consolidation of VNX block alerts does not require separate configuration. Follow the procedure below to configure forwarding of VNX file alerts to ViPR SRM.

Procedure

1. Log into Control Station as the root user.
2. Open the **nas_mcd.cfg** configuration file in **the /nas/sys/** directory.
3. Enable the XML-API service by uncommenting the following entry:

```
daemon "XML API Server"  
executable "/nas/sbin/start_xml_api_server"  
optional yes  
canexit yes  
autorestart yes  
ioaccess no
```
4. Type **# service nas start**, and press Enter to restart the XML-API service.
5. If you have multiple VNX arrays in your storage environment, repeat this procedure on each VNX array.