



SNMP Plugin

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The SNMP plugin is a self-contained Docker container that includes REST API support and is managed by UFM. Its primary function is to receive SNMP traps from switches and forward them to UFM as external events. This feature enhances the user experience by providing additional information about switches in the InfiniBand fabric via UFM events and alarms.

Deployment

There are two potential deployment options for the SNMP plugin:

- On UFM Appliance
- On UFM Software

For detailed instructions on how to deploy the SNMP plugin, refer to [this page](#).

Authentication

The following authentication types are supported:

- basic (/ufmRest)
- client (/ufmRestV2)
- token (/ufmRestV3)

REST API

The following REST API are supported:

- GET /switch_list
- GET /trap_list
- POST /register
- POST /unregister
- POST /enable_trap

- POST /disable_trap
- GET /version

For more information, please refer to [UFM Enterprise Documentation](#) UFM REST API
SNMP Plugin REST API.

Usage

By default, upon initialization, the SNMP plugin captures traps from all switches within the fabric. However, this behavior can be modified through configuration settings utilizing the "snmp_mode" option, with available values of "auto" or "manual".

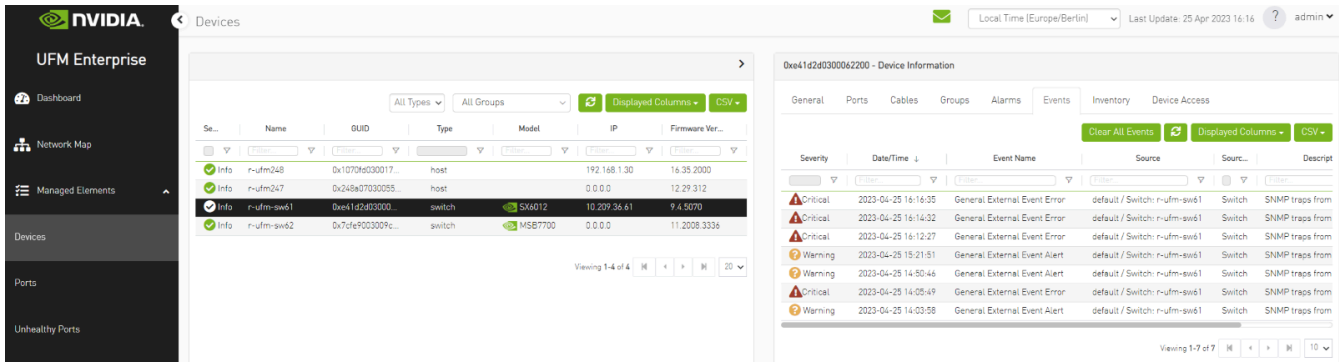
It is important to ensure that the switch is visible to UFM and has a valid IP address. As illustrated in the following example, switch traps will only be received from "r-ufm-sw61".

Severity	Name	GUID	Type	Model	IP	Firmware Version
Info	r-ufm248	Dx1070f603001763ec	host		192.168.1.30	16.35.2000
Info	r-ufm247	Dx248a870300554548	host		0.0.0.0	12.29.312
Info	r-ufm-sw61	Dxe41d2d0300052200	switch	SN6012	10.209.35.61	9.4.5070
Info	r-ufm-sw62	Dx7dfe900300fce8e0	switch	MSB7700	0.0.0.0	11.2008.3336

The following is an instance of a trap received by the SNMP plugin and displayed as a UFM event:

Severity	Event Name	Source	Description	Category
Critical	General External Event Error	Gnd	SNMP traps from 10.209.34.108: 'oid=MELLANOX-EFM-MIB::systemHealthStatus, MELLANOX-EFM-MIB::mHealthStatus.1 = Power Supply 2 is unresponsive.' happened 1 times	
Critical	General External Event Error	default / Switch: r-ufm-sw61	SNMP traps from r-ufm-sw61: 'oid=MELLANOX-EFM-MIB::systemHealthStatus, MELLANOX-EFM-MIB::mHealthStatus.1 = Power Supply 1 is unresponsive.' happened 1 times	
Critical	Disk utilization threshold reached	Gnd	Disk space usage in /opt/ufm/files/log is above the threshold of 90.0%.	
Warning	General External Event Alert	default / Switch: r-ufm-sw61	SNMP traps from r-ufm-sw61: 'oid=MELLANOX-EFM-MIB::testTrap, IF-MIB::PhysAddress.2 = e1-1d-2d-60-91-20.' happened 1 times	

Additionally, there is an option to verify events/alarms for a particular switch:



The SNMP plugin performs a periodic check of the fabric every 180 seconds, allowing for prompt receipt of traps from new switches or updated IP addresses of existing switches in under 180 seconds. This interval may be adjusted via the "ufm_switches_update_interval" option. To manually register or unregister a switch, please refer to the [UFM Enterprise Documentation](#) UFM REST API SNMP Plugin REST API.

The SNMP plugin employs the most up-to-date SNMP v3 protocol, which incorporates advanced security measures such as authentication and encryption. The "snmp_version" option enables the selection of SNMP versions "1" or "3". It is essential to note that only switch-exposed traps will be transmitted to UFM as events.

OID	Name	Description	Status	Severity
MELLANOX-EFM-MIB::testTrap	send-test	A test trap ordered by the system administrator	Enabled	Warning
MELLANOX-EFM-MIB::asicChipDown	asic-chip-down	ASIC (Chip) Down	Enabled	Critical
MELLANOX-EFM-MIB::cpuUtilHigh	cpu-util-high	CPU utilization has risen too high	Enabled	Warning
MELLANOX-EFM-MIB::diskSpaceLow	disk-space-low	Filesystem free space has fallen too low	Enabled	Warning
MELLANOX-EFM-MIB::expectedShutdown	expected-shutdown	Expected system shutdown	Enabled	Info
MELLANOX-EFM-MIB::systemHealthStatus	health-module-status	Health module Status	Enabled	Critical
MELLANOX-EFM-MIB::insufficientFans	insufficient-fans	Insufficient amount of fans in system	Enabled	Warning

OID	Name	Description	Status	Severity
MELLANOX-EFM-MIB::insufficientFansRecover	insufficient-fans-recover	Insufficient amount of fans in system recovered	Enabled	Info
MELLANOX-EFM-MIB::insufficientPower	insufficient-power	Insufficient power supply	Enabled	Warning
RFC1213::linkdown	interface-down	An interface's link state has changed to down	Enabled	Minor
RFC1213::linkup	interface-up	An interface's link state has changed to up	Enabled	Info
MELLANOX-EFM-MIB::unexpectedShutdown	unexpected-shutdown	Unexpected system shutdown	Enabled	Minor
SNMPv2-MIB::coldStart	cold-start	SNMP entity reinitialized	Enabled	Info

To learn more about how to enable or disable a specific trap, please refer to the [UFM Enterprise Documentation](#) UFM REST API SNMP Plugin REST API.

If some traps are not included in the default list, they may be added using the "snmp_additional_traps" option. The SNMP plugin will consider these traps as "enabled" and transmit them to UFM as events with an "Info" severity level.

To ensure the uninterrupted reception of traps from switches within a large fabric, changes must be made to the UFM configuration in the [/opt/ufm/conf/gv.cfg] file's [Events] section. Specifically, the "max_events" option should be raised from 100 to 1000, while "medium_rate_threshold" and "high_rate_threshold" should both be set to 500. To implement configuration adjustments, disable and then enable the plugin.

In case of an event storm, it is necessary to adjust the Event Policy settings such that General Events are non-alarmable and the TTL is set to zero, as illustrated in the following screenshot:

The screenshot shows the NVIDIA UFM Enterprise Settings page. The left sidebar contains navigation options: Dashboard, Network Map, Managed Elements, and Events & Alarms. The main content area is titled 'Settings' and includes a navigation bar with options like Events Policy, Device Access, Network Management, Subnet Manager, Non-Optimal Links, User Management, Email, Remote Location, Data Streaming, Topology Compare, Access Tokens, and Plugin Management. Below this, there's a table showing configurations for the SNMP plugin. The table has columns for Event, Category, Mail, GUI, Alarm, Syslog, Log File, SNMP, Threshold, TTLSect, and Severity. The 'Alarm' and 'TTLSect' columns are highlighted with red boxes. The table lists four event types: General External Event Notification, General External Event Notice, General External Event Alert, and General External Event Error. Each row has checkboxes for Mail, GUI, Alarm, Syslog, Log File, and SNMP, and a numerical value for Threshold and TTLSect. The Severity column shows Info, Minor, Warning, and Critical levels.

Event	Category	Mail	GUI	Alarm	Syslog	Log File	SNMP	Threshold	TTLSect	Severity
General External Event Notification		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	0	0	Info
General External Event Notice		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	0	0	Minor
General External Event Alert		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	0	0	Warning
General External Event Error		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	0	0	Critical

Other

Additional configurations are located in `"/opt/ufm/conf/plugins/snmp/snmp.conf"`. To implement configuration adjustments, disable and then enable the plugin. For instructions on modifying the appliance, please refer to the [UFM-SDN App CLI Guide](#).

Logs for the SNMP plugin are stored in `"/opt/ufm/logs/snmptrap.log"`. For guidance on accessing logs on the appliance, please refer to the [UFM-SDN App CLI Guide](#).

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