DEPLOYMENT GUIDE

Outbound API Integration with Rapid7 Nexpose

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Introduction

Infoblox's Outbound REST API integration framework is a new way to update both IPAM data (networks, hosts, leases) and DNS threat data into additional ecosystem solutions. Infoblox and Rapid7 Nexpose together enable security and incident response teams to leverage the integration of vulnerability scanners and DNS security to enhance visibility, manage assets, ease compliance and automate remediation. Thus, improving your security posture while maximizing your ROI in both products.

Prerequisites

The following are prerequisites for Outbound API notifications:

- Infoblox Grid running NIOS 8.1 or higher.
- Security Ecosystem license.
- Pre-configured services: DHCP, RPZ, Threat Analytics.
- Installed and configured Rapid7 Nexpose solution.
- Users credentials on Rapid7 Nexpose and NIOS.
- Network access from Grid Master or Grid Master Candidate (depending on the configuration) to Rapid7 Nexpose

Known Limitations

- Rapid7 Nexpose does not allow modifying a site configuration if a scan for any asset included to the site is being performed.
- Rapid7 Nexpose manages discovered assets only by an IP-address.
- Deletion of merged networks or ranges is not supported.
- Maximum 1,000 sites are supported. Templates can delete a discovered asset if a site does not contain more than 1,000 discovered assets.
- Provided templates do not support "MODIFY" action.

Best Practices

Outbound API templates can be found on the Infoblox community site. After registering an account, (Infoblox Community) you can subscribe to the relevant groups and forums.

For production systems, it is highly recommended to set the log level for an endpoint to "**Info**" or higher ("**Warning**", "**Error**").

Please refer to Infoblox's NIOS Administration guide about other best practices, limitations and any detailed information on developing notification templates.

Workflow

Use the following workflow to enable, configure and test outbound notifications:

- Install the Security Ecosystem license if it was not installed.
- Check that necessary services DHCP, RPZ, and Threat Analytics are configured.
- Create Extensible Attributes.
- Create or download from Infoblox's community web-site session (Rapid7_Nexpose_Session.json), login (Rapid7_Nexpose_Login.json) and logout templates (Rapid7_Nexpose_Logout.json).
- Add/upload login, logout and session template.
- Create or download from Infoblox's community web-site notification templates (Rapid7_Nexpose_Assets.json, Rapid7_Nexpose_SecEvent.json).
- Add/upload the notification templates.
- Add a REST API Endpoint.
- Add Notifications.
- Emulate an event, then check the debug log and/or verify changes on the REST API Endpoint.

Check if the Security Ecosystem license is installed

The Security Ecosystem license is a Grid Wide license. Grid wide licenses activate services on all appliances in the same Grid.

To check if the license was installed, go to **Grid** → **Licenses** → **Grid Wide**.

Download templates from the Infoblox's community web-site

The Outbound API notifications template is an essential part of the configuration. Templates fully control the integration and steps required to execute the outbound notifications. Detailed information on developing templates can be found in the NIOS Administrator guide.

Infoblox does not distribute any templates with the NIOS releases (out-of-box). Templates are available on the Infoblox community web-site. The templates for integration with Rapid7 are located in the Rapid7 group (Rapid7 Integration with Infoblox). Other templates are posted in the "**API & Integration**" forum (API & Integration, DevOps,NetOps,SecOps - Infoblox Experts Community).

The required configuration should be provided with a template. Do not forget to apply changes required by the template before testing a notification.

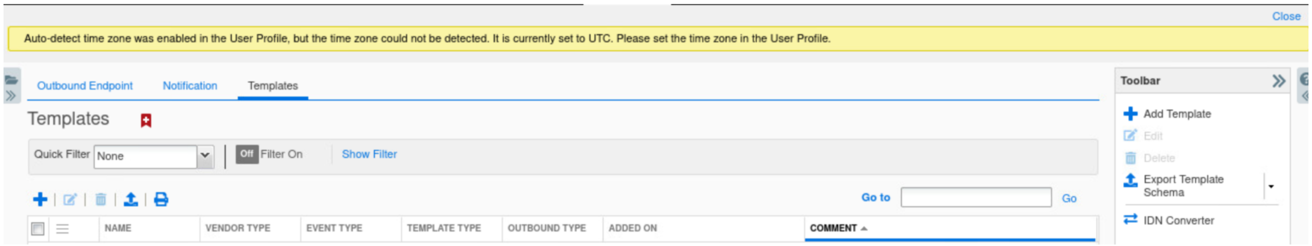
Create Extensible Attributes

Rapid7 Nexpose outbound API notifications templates use different extensible attributes to adjust the template's behavior. The extensible attributes are described in the table below.

Extensible Attribute	Description
R7_Sync	Defines if an object should be synced with Rapid7 Nexpose. Possible values: true, false
R7_SyncedAt	Contains date/time when the object was synchronized, updated by the assets management template
R7_NetToSite	Defines if a network should be added to a site (as shown on the video). Possible values: true, false. If R7_NetToSite is false but R7_Sync is true, R7_SiteID will be updated.
R7_RangeToSite	Defines if a range should be added to a site. Possible values: true, false. If R7_NetToSite is false but R7_Sync is true, R7_SiteID will be updated.
R7_ScanOnEvent	Defines if an asset should be scanned if RPZ or DNS Tunneling events were triggered
R7_ScanOnAdd	Defines if an asset should be scanned immediately after creation.
R7_ScanTemplate	Defines a Rapid7 Nexpose template, which should be used for scans initiated by an Infoblox appliance. Possible values: default, full-audit, full-audit-without-web-spider etc (internal templates IDs). If set to "default" then a template configured for a site will be used.
R7_Site	Defines a Site name
R7_SiteID	This attribute has an internal site ID from Rapid7 that is automatically updated. If the ID were inherited from a higher level, the templates would skip a few steps to retrieve it, making the execution dramatically faster. It is not advisable to manually update this attribute.
R7_LastScan	Contains a date when an asset was scanned last time by a request from Infoblox
R7_AddByHostname	Defines if a host should be synced with Rapid7 Nexpose using a hostname. The hostname should be resolvable by Nexpose. Possible values: true, false

Add/upload templates

To upload/add templates go to **Grid** → **Ecosystem** → **Templates**, and press the "**+**" or "**+ Add Template**" buttons.



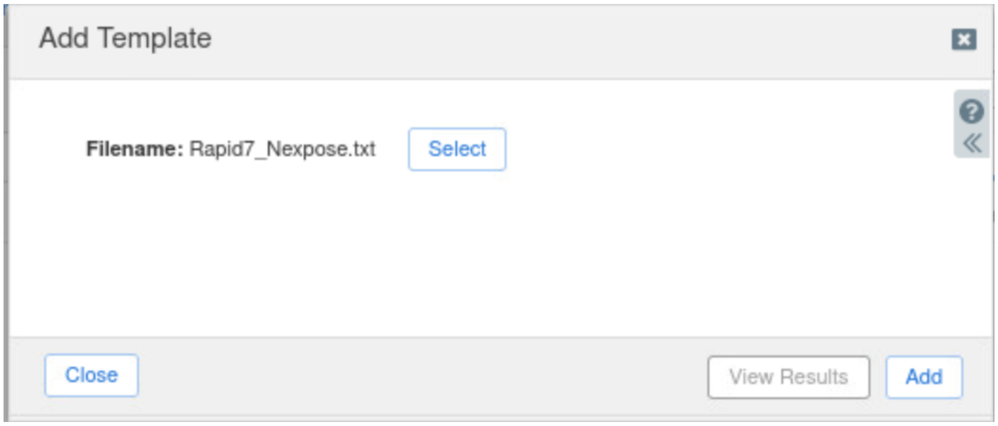
Auto-detect time zone was enabled in the User Profile, but the time zone could not be detected. It is currently set to UTC. Please set the time zone in the User Profile.

Quick Filter: None

1. The “**Add template**” window will open.

2. If the template was previously uploaded, check the “**Overwrite the existing template**” option. Press the “**Select**” button on the “**Add template**” window,

3. Press the “**Select**” button on the “**Upload**” window. The standard file selection dialog will be opened. Select the file and press the “**Upload**” button on the “**Upload**” window.

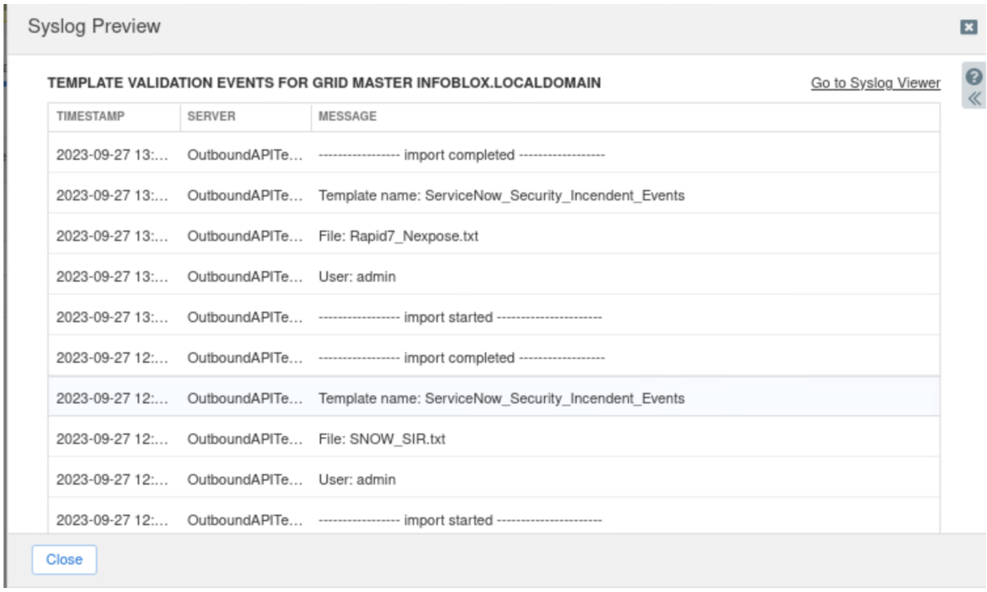


Add Template

Filename: Rapid7_Nexpose.txt

4. Press the “**Add**” button and the template will be added/uploaded.

5. You can review the upload results in the syslog or by pressing the “**View Results**” button. There is no difference between uploading session management and action templates.



Syslog Preview

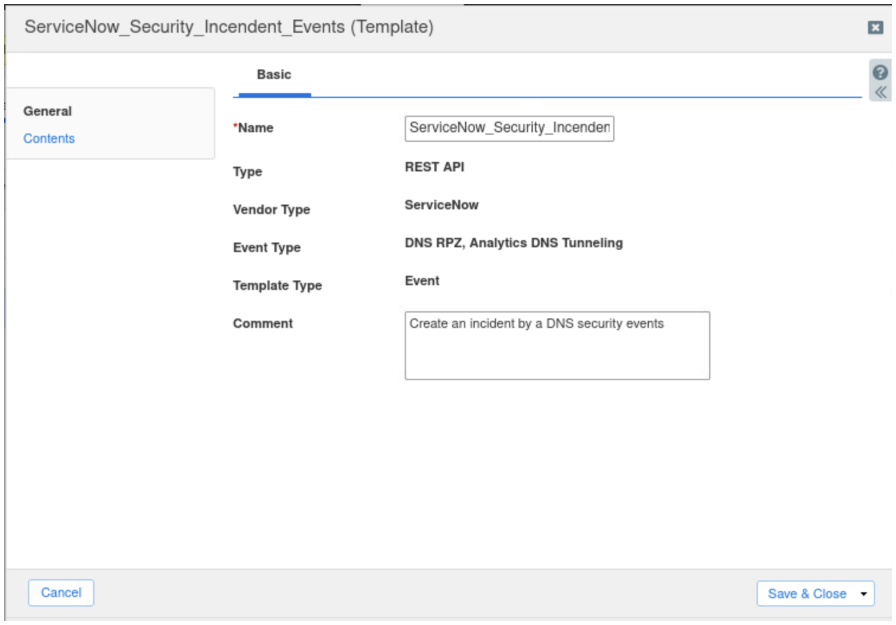
TEMPLATE VALIDATION EVENTS FOR GRID MASTER INFOBLOX.LOCALDOMAIN

Go to Syslog Viewer

TIMESTAMP	SERVER	MESSAGE
2023-09-27 13:...	OutboundAPITe...	---------------- import completed -----------------
2023-09-27 13:...	OutboundAPITe...	Template name: ServiceNow_Security_Incendent_Events
2023-09-27 13:...	OutboundAPITe...	File: Rapid7_Nexpose.txt
2023-09-27 13:...	OutboundAPITe...	User: admin
2023-09-27 13:...	OutboundAPITe...	---------------- import started ---------------------
2023-09-27 12:...	OutboundAPITe...	---------------- import completed -----------------
2023-09-27 12:...	OutboundAPITe...	Template name: ServiceNow_Security_Incendent_Events
2023-09-27 12:...	OutboundAPITe...	File: SNOW_SIR.txt
2023-09-27 12:...	OutboundAPITe...	User: admin
2023-09-27 12:...	OutboundAPITe...	---------------- import started ---------------------

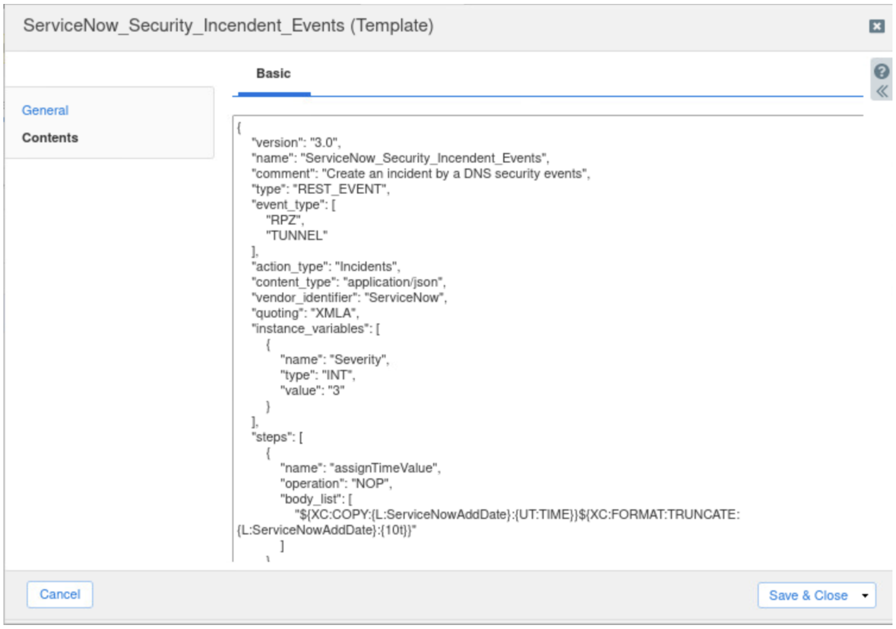
Modifying Templates

NIOS provides the facility to modify the templates via the web-interface.



ServiceNow_Security_Incendent_Events (Template)

*Name	ServiceNow_Security_Incenden
Type	REST API
Vendor Type	ServiceNow
Event Type	DNS RPZ, Analytics DNS Tunneling
Template Type	Event
Comment	Create an incident by a DNS security events



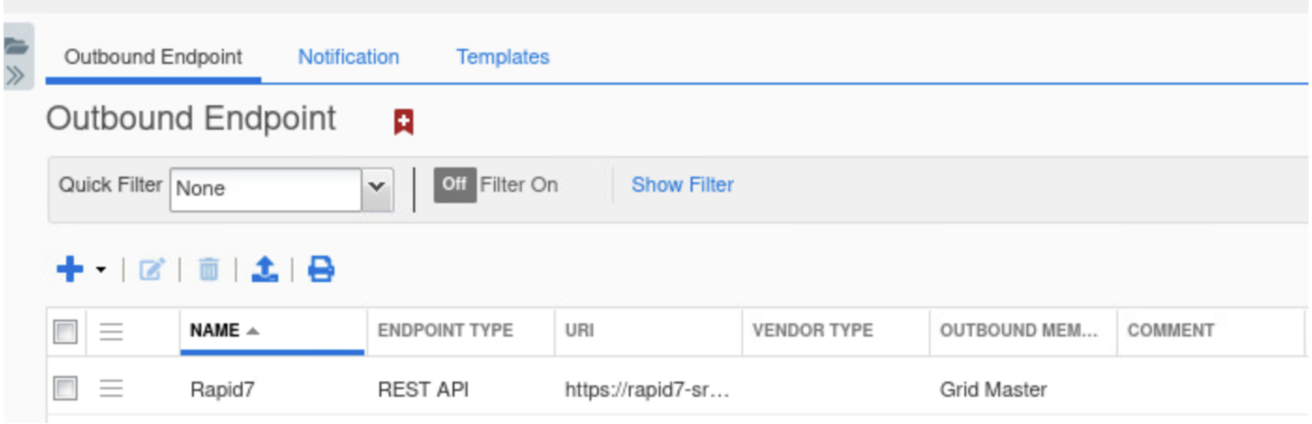
```
{
   "version": "3.0",
   "name": "ServiceNow_Security_Incendent_Events",
   "comment": "Create an incident by a DNS security events",
   "type": "REST_EVENT",
   "event_type": [
      "RPZ",
      "TUNNEL"
   ],
   "action_type": "Incidents",
   "content_type": "application/json",
   "vendor_identifier": "ServiceNow",
   "quoting": "XMLA",
   "instance_variables": [
      {
         "name": "Severity",
         "type": "INT",
         "value": "3"
      }
   ],
   "steps": [
      {
         "name": "assignTimeValue",
         "operation": "NOP",
         "body_list": [
            "${XC:COPY:{L:ServiceNowAddDate}:{UT:TIME}}${XC:FORMAT:TRUNCATE:
{L:ServiceNowAddDate}:{10t}}"
         ]
      }
```

The template editor provides a simple interface to change a template, so it is recommended to use it only when making minimal changes. You can also edit, cut and paste template snippets from the text editor of your choice.

Note: Please be aware that you cannot delete a template if it is used by an endpoint or by a notification.

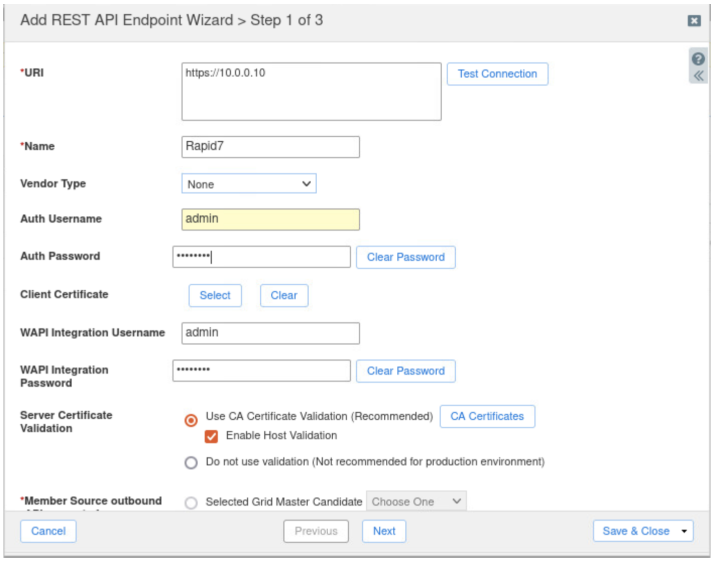
Add a REST API Endpoint

A REST API Endpoint is basically a remote system, which should receive changes based on a notification and a configured template. A Grid, for example, can not only send notifications, it can also receive the notifications from itself (e.g. for testing purposes).



NAME ▲	ENDPOINT TYPE	URI	VENDOR TYPE	OUTBOUND MEM...	COMMENT
Rapid7	REST API	https://rapid7-sr...		Grid Master	

In order to add REST API Endpoints go to **Grid** → **Ecosystem** → **REST API Endpoints** and press "**+**" or "**+ Add REST API Endpoint**" buttons.



Add REST API Endpoint Wizard > Step 1 of 3

*URI	https://10.0.0.10
*Name	Rapid7
Vendor Type	None
Auth Username	admin
Auth Password	••••••••
Client Certificate	
WAPI Integration Username	admin
WAPI Integration Password	••••••••
Server Certificate Validation	● Use CA Certificate Validation (Recommended) ☑ Enable Host Validation ○ Do not use validation (Not recommended for production environment)
*Member Source outbound	○ Selected Grid Master Candidate Choose One

- The “**Add REST API Endpoint Wizard**” window will open. The URI and Name fields are the required fields.

- Specify “**Auth Username**”, “**Auth Password**” (Rapid7 credentials), “**WAPI Integration Username**” and “**WAPI Integration Password**” (NIOS credentials).

- For debug purposes (during initial configuration only) set the Log Level to “**Debug**”.

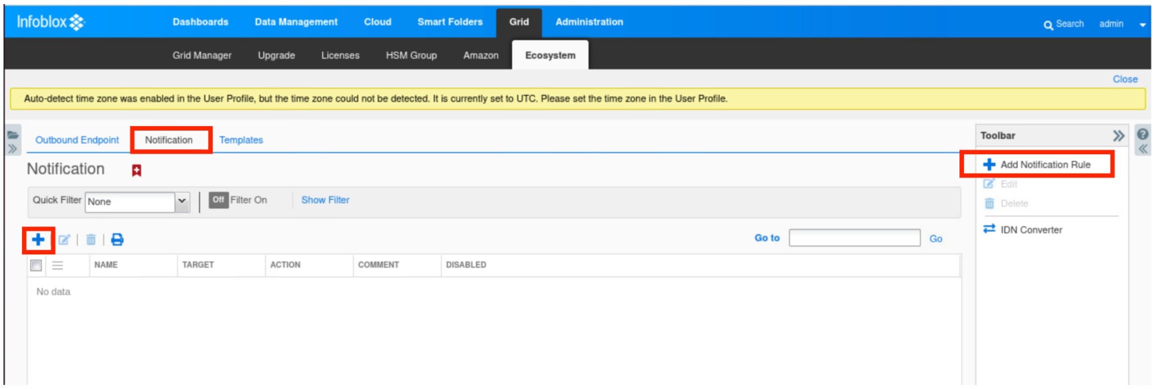
- It is recommended to send notifications from a Grid Master Candidate if there is one available instead of Grid Master.

- Please be aware that “**Test Connection**” only checks communication (establishes TCP connection with a remote system) with the URI. It does not check the authentication/authorization credentials.

Add a Notification

A notification is a link between a template, an endpoint, and an event. In the notification you define by which event triggers the notification, which template is executed and with which API endpoint the Grid will establish a connection. The Rapid7 templates support all available notifications. In order to simplify the deployment, create only required notifications and use relevant filters. It is highly recommended to configure deduplication for RPZ events and exclude a feed automatically populated by Threat Analytics.

An endpoint and a template must be added before you can add a notification.



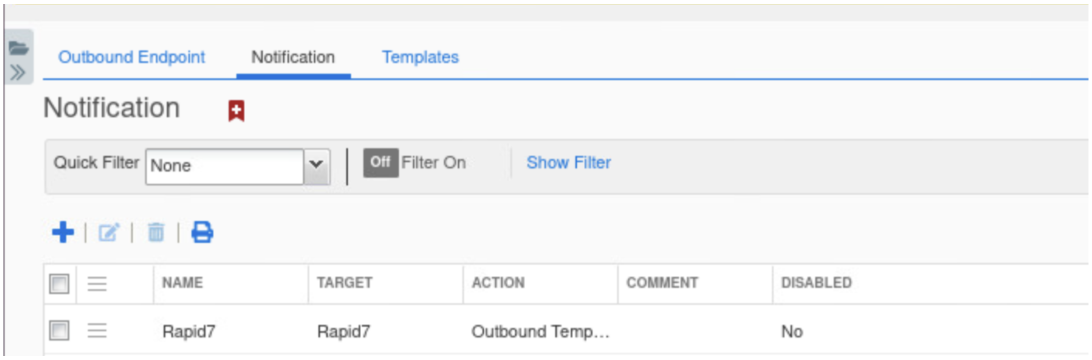
Auto-detect time zone was enabled in the User Profile, but the time zone could not be detected. It is currently set to UTC. Please set the time zone in the User Profile.

NAME	TARGET	ACTION	COMMENT	DISABLED
No data				

- In order to add notifications go to **Grid** → **Ecosystem** → **Notification** and press “**+**” or “**+ Add Notification Rule**” buttons.
- The " **Add Notification Wizard**” window will open.
- On the first step: input the notification’s name and select an endpoint (Target).
- On the second step: select an event type and define a filter. From the performance perspective it is the best practice to make filters as narrow as possible.
- On the third step select a relevant template and specify template parameters if any are required.

Check the configuration

You can now emulate an event for which a notification was added (click on a gear icon next to the notification, and select “**Test Rule**”). E.g. create a host record, or add a DHCP lease. If you have the debug log enabled, you can check it for any problems or errors. To check a debug log for an endpoint, go to **Grid** → **Ecosystem** → **REST API Endpoints**, click on the gear icon and select “**View Debug Log**”.



Notification

Quick Filter: None

Off Filter On

NAME	TARGET	ACTION	COMMENT	DISABLED
Rapid7	Rapid7	Outbound Temp…		No

Depending on the browser the debug log will be downloaded or opened in a new tab, you may need to check your popup blocker settings.

Infoblox unites networking and security to deliver unmatched performance and protection. Trusted by Fortune 100 companies and emerging innovators, we provide real-time visibility and control over who and what connects to your network, so your organization runs faster and stops threats earlier.

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