



Purpose

This document describes how to use a Nagios Log Server Output to create Passive Host and Service objects in Nagios XI. This document provides an example of how Nagios Log Server Outputs can perform tasks on the log data it receives.

Target Audience

This document is intended for use by Nagios Administrators who wish to automate the creation of passive host and service objects in Nagios XI. It also is a learning tool for how to use Outputs in Nagios Log Server.

Background

Passive monitoring is when your Nagios XI server receives check results from devices. This differs from Active monitoring where the Nagios XI server itself is responsible for scheduling the checks of devices.

When Nagios XI receives passive check results from devices that it does not know about, these end up in the **Unconfigured Objects** section of Nagios XI (and recorded in the `nagios.log` file). These will not be visible in the host and service status pages until they have been turned into monitoring objects, this is a manual step that needs to be performed by a Nagios Administrator.

Using Nagios Log Server, you can observe the `nagios.log` file for the specific passive events that are recorded. When those events are received by Nagios Log Server, an Output can be used to execute a command that will create the passive objects in Nagios XI.

Creating the passive objects in Nagios XI is performed by using the REST API in Nagios XI. A custom script is used that simplifies the creation of the object using the API.

Requirements

This documentation has the following requirements:

- Nagios XI Server
 - Nagios XI 5.x
 - A administrative user account that has API access enabled
 - It receives passive check results
 - It is configured to send `nagios.log` to your Nagios Log Server (explained [below](#))
- Nagios Log Server Instance
 - Requires that Nagios Log Server is configured with the Nagios Core Filter (explained [below](#))

Configure Nagios Log Server To Receive Nagios XI Logs

You will need to first create a filter in Nagios Log Server to turn the received `nagios.log` log data into fields that are stored in the Elasticsearch database. The following documentation includes detailed steps on how to create the filter:

[Sending Nagios Core Logs To Nagios Log Server](#)

That documentation also contains the required steps to configure your Nagios XI server to send it's `nagios.log` log file to your Nagios Log Server instance.

You will need to have configured these two steps before proceeding.

Confirm Logs Are Received

Before proceeding any further a test will be performed to ensure that the correct events are being received by Nagios Log Server for passive checks submitted to Nagios XI. The following commands are to be executed on your Nagios XI host in a terminal session, they simulate a passive host and service check:

```
now_epoch=$(eval date +%s); printf "[$now_epoch] PROCESS_HOST_CHECK_RESULT;Test Host;0;Host output\n" > /usr/local/nagios/var/rw/nagios.cmd
```

```
now_epoch=$(eval date +%s); printf "[$now_epoch] PROCESS_SERVICE_CHECK_RESULT;Test Host;Test Service;0;Service output\n" > /usr/local/nagios/var/rw/nagios.cmd
```

The commands should be typed as one long command, they just wrap over multiple lines in this documentation due to their length.

In Nagios Log Server, on the Dashboards page use the query:

```
program:nagios_core
```

You should see an event similar to the screenshot to the right.

What is important here is the message, `nagios_host` and `nagios_service` fields. The `nagios_service` field will not be present for a passive host check result.

If your results are similar then you are ready to proceed to the next step.

Field	Action	Value	Search
<input checked="" type="checkbox"/> @timestamp	Q 🔍	2017-10-25T05:43:19.000Z	Q ▾
<input type="checkbox"/> @version	Q 🔍	1	Q ▾
<input type="checkbox"/> _id	Q 🔍	AV9SDpUCpIMWNT2xC_Sc	Q ▾
<input type="checkbox"/> _index	Q 🔍	logstash-2017.10.25	Q ▾
<input type="checkbox"/> _type	Q 🔍	nagios_core	Q ▾
<input type="checkbox"/> epoch_timestamp	Q 🔍	1508910199	Q ▾
<input type="checkbox"/> facility	Q 🔍	16	Q ▾
<input type="checkbox"/> facility_label	Q 🔍	local0	Q ▾
<input type="checkbox"/> highlight	Q 🔍	[object Object]	Q ▾
<input checked="" type="checkbox"/> host	Q 🔍	10.25.5.2	Q ▾
<input type="checkbox"/> logsource	Q 🔍	xitest	Q ▾
<input checked="" type="checkbox"/> message	Q 🔍	Warning: Passive check result was received for service 'Test Service' on host 'Test Host', but the host could not be found!	Q ▾
<input type="checkbox"/> nagios_host	Q 🔍	Test Host	Q ▾
<input type="checkbox"/> nagios_service	Q 🔍	Test Service	Q ▾
<input type="checkbox"/> nagios_severity_label	Q 🔍	Warning	Q ▾
<input type="checkbox"/> priority	Q 🔍	133	Q ▾
<input type="checkbox"/> program	Q 🔍	nagios_core	Q ▾
<input type="checkbox"/> severity	Q 🔍	5	Q ▾
<input type="checkbox"/> severity_label	Q 🔍	Notice	Q ▾
<input type="checkbox"/> timestamp	Q 🔍	Oct 25 16:43:27	Q ▾
<input checked="" type="checkbox"/> type	Q 🔍	nagios_core	Q ▾

Enable REST API Access On Nagios XI User

To be able to create objects using the Nagios XI REST API you require an **Admin** user account that has REST API privileges. In Nagios XI navigate to **Admin > Users > Manage Users**. Edit an existing user or create a new user and enable the **Has API access** setting.

Edit User: apiuser

General Settings

Username:	<input type="text" value="apiuser"/>
New Password:	<input type="password"/>
Repeat New Password:	<input type="password"/>
Force Password Change at Next Login:	<input type="checkbox"/>
Email User New Password:	<input type="checkbox"/>
Name:	<input type="text" value="API User"/>
Email Address:	<input type="text" value="api@box293.local"/>
Enable Notifications:	<input checked="" type="checkbox"/>
Account Enabled:	<input checked="" type="checkbox"/>

Security Settings

Authorization Level: ?	Admin
Can see all objects: ?	<input checked="" type="checkbox"/>
Can (re)configure hosts and services: ?	<input checked="" type="checkbox"/>
Can control all objects: ?	<input checked="" type="checkbox"/>
Can see/control monitoring engine:	<input checked="" type="checkbox"/>
Can access advanced features: ?	<input checked="" type="checkbox"/>
Has read-only access:	<input type="checkbox"/>
Has API access:	<input checked="" type="checkbox"/>

API Settings

API Key:

You will also need the API Key for the following steps, you should copy it into a text file so you can paste it later. Be aware that the key may be longer than the size of the box, double clicking it should highlight the entire key.

Download And Test API Script

A custom script will be used to create the passive objects on the Nagios XI server, it simplifies how the API is used by the Nagios Log Server Output you will create later. The script is located here:

https://github.com/T-M-D/NXI-Collection/blob/master/API/box293_xi_api_create_passive_object.php

The steps on the following page will download the script for you and set the correct permissions.

Nagios Log Server Using An Output To Create Nagios XI Passive Objects

Establish a terminal session to your Nagios Log Server instance and execute the following commands:

```
cd /usr/local/nagioslogserver/scripts/
```

The following command should be typed as one long command, it is wrapped over two lines in this document:

```
curl -s -O https://raw.githubusercontent.com/T-M-D/NXI-Collection/master/API/box293_xi_api_create_passive_object.php
```

These remaining steps correctly set the permissions:

```
chown nagios:nagios box293_xi_api_create_passive_object.php
chmod +x box293_xi_api_create_passive_object.php
```

Now that you have the script, you can test it by creating a passive host object in Nagios XI by executing the script with the correct arguments. The command requires you to replace these values:

- `xxx.xxx.xxx.xxx` = Nagios XI server address (IP or DNS)
- `your_api_key` = The REST API key you obtained earlier

On your Nagios Log Server instance execute the following command to create the test host object:

```
./box293_xi_api_create_passive_object.php --url='https://xxx.xxx.xxx.xxx/nagiosxi'
--apikey='your_api_key' --type=host --host='Test Host'
```

```
{"success": "Successfully added Test Host to the system. Config applied, Nagios
Core was restarted."}
```

Once your script is working you are ready to create an Output in Nagios Log Server that will call the script. More information on the script can be found in the [API Script Notes](#) section of this document.

Create Output

The last step is to create an Output in Nagios Log Server. You will need to visit the following URL to obtain a copy of the Output:

https://raw.githubusercontent.com/T-M-D/NLS-Collection/master/Outputs/Nagios_XI_Create_Passive_Object.txt

The text in the file contains a lot of instructions, at the bottom of the file you will need to copy everything from the following line to the end of the file into your clipboard:

```
if [program] == "nagios_core" {
```

Open a text editor like Notepad and paste the contents of your clipboard into the text editor, you will need to make some changes to the Output first. Make the following changes to the `command` lines:

- `xxx.xxx.xxx.xxx` = Nagios XI server address (IP or DNS)
- `your_api_key` = The REST API key you obtained earlier

Once you have made those changes, copy the entire Output into your clipboard as you will need to paste it into the Output that you create.

Navigate to **Configure > Global (All Instances) > Global Config** and click the **Show Outputs** button.

The screenshot shows the Nagios Log Server web interface. The top navigation bar includes 'Home', 'Dashboards', 'Alerting', 'Configure', 'Help', and 'Admin'. The 'Configure' menu is highlighted. The main content area is titled 'Global Config' and contains a message: 'Manage logstash config options that will be added to all instances. Note that all applied global filters will happen before the local filters. Keep in mind the flow of the log data through the filters when creating global filters. View Logstash config language documentation'. Below this message are buttons for 'Save', 'Save & Apply', 'Verify', and 'View'. On the right side, there are buttons for 'Show Outputs' (circled in red), 'Add Filter', and 'Hide Outputs'. At the bottom, there is a message: 'There are no outputs created for this configuration.'

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You can now click **+ Add Output** and select **Custom**.

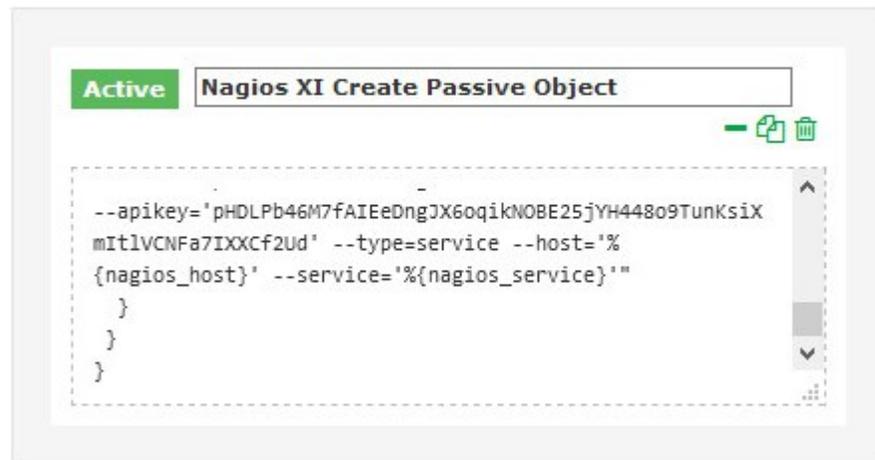
In the new Output that appears you will need to provide a title in the *Block Name* field.

In the text area field paste the Output that you previously copied into your clipboard.

Click the **Save** button to create the new Output.

Outputs

+ Add Output ▾



Active Nagios XI Create Passive Object

```
--apikey='pHDLpb46M7fAIeDngJX6oqikNOBE25jYH448o9TunKsiXmItlVCNFa7IXXcf2Ud' --type=service --host='{nagios_host}' --service='{nagios_service}'
}
```

At this point you should click the **Verify** button to ensure the Output you just created is valid. Once the verify is successful you need to apply the configuration. In the left pane under **Configure** click **Apply Configuration**. Click the **Apply** button and then click **Yes, Apply Now** when prompted.

Test

Now that you have completed creating the Output all that remains is to perform a test to ensure everything is working OK. Earlier in this document under the [Confirm Logs Are Received](#) section you executed a command, execute a similar command again on your Nagios XI server to submit a passive check result, for example:

```
now_epoch=$(eval date +%s); printf "[$now_epoch]
PROCESS_SERVICE_CHECK_RESULT;Another Host;Test Service;0;Service output\n" >
/usr/local/nagios/var/rw/nagios.cmd
```

Once your Nagios Log Server instance receives the log it will execute the Output command and create the new passive object in Nagios XI, you can see an example in the following screenshot:

Host	Service	Status	Duration	Attempt	Last Check	Status Information
Another Host	Test Service	Pending	N/A	1/1	N/A	No check results for service yet...

Congratulations, you have now implemented automated passive object creation in Nagios XI using Nagios Log Server.

API Script Notes

You might be wondering why the API script is required, surely the Output could talk to the API directly. The following explains why the script is used:

- It verifies it can successfully communicate with the API before creating new objects
- It checks to see if an object exists before creating the new object
- For passive service objects, it checks to see if the host object exists, if it does not it will create a passive host object before the service object

The script will initiate an Apply Configuration to be performed on your Nagios XI server when it creates the passive objects, this ensures they are part of the running configuration. The script has an `--apply` argument that allows you to disable this functionality, the syntax is:

```
--apply='false'
```

If you add that to the commands in your Output, the objects will still be added to Nagios XI however an Apply Configuration will not be performed. You will need to manually go into the Nagios XI **Core Configuration Manager** and perform an **Apply Configuration** for these new objects to be part of the running configuration.

Finishing Up

This completes the documentation on how to use an Output in Nagios Log Server to create passive objects

on your Nagios XI server.

If you have additional questions or other support related questions, please visit us at our Nagios Support Forums:

<https://support.nagios.com/forum>

The Nagios Support Knowledgebase is also a great support resource:

<https://support.nagios.com/kb>