

The Industry Standard in IT Infrastructure Monitoring

Purpose

This document describes how to use custom Apache ActiveMQ plugins and checks to monitor your Apache ActiveMQ server with Nagios XI. Specifically, this document shows you how to set up Nagios XI to get up to date information on how many objects are in the ActiveMQ server queue.

Target Audience

This document is intended for use by Nagios XI administrators who wish to take advantage of the ability to check the health and vital statistics of their Apache ActiveMQ systems.

What Is Apache ActiveMQ?

“Apache ActiveMQ is an open source message broker written in Java together with a full Java Message Service (JMS) client. It provides “Enterprise Features” which in this case means fostering the communication from more than one client or server. Supported clients include Java via JMS 1.1 as well as several other “cross language” clients. The communication is managed with features such as computer clustering and ability to use any database as a JMS persistence provider besides virtual memory, cache, and journal persistence.” – http://en.wikipedia.org/wiki/Apache_ActiveMQ



Prerequisites

This document assumes you have the following prerequisites:

- Apache ActiveMQ 5.14.3 (May work with older releases)
- Access to a user who has access to read queues within queues.jsp
- The [activemq_watch plugin](#) (link given below)
- A network route from your Nagios XI server to the Apache ActiveMQ server
- The NRPE agent configured on the Apache ActiveMQ server (explained below)

Note: If you need assistance adding a new user such as “nagios, or nagiosadmin” to the ActiveMQ server with the correct permissions please reference:

<http://activemq.apache.org/getting-started.html>

For the purpose of this documentation, ApacheMQ is running on CentOS 7.x and hence some commands may be RHEL/CentOS oriented. You will need to adapt these commands to your environment.

Install NRPE

You will need to install the NRPE agent on the ActiveMQ server to execute a plugin that does the monitoring (you will download in the next step). For instructions on installing NRPE reference the following document:

https://assets.nagios.com/downloads/nagiosxi/docs/Monitoring_Hosts_Using_NRPE.pdf

Download The Plugin To The ActiveMQ Server

In this example you will need to have already installed NRPE (the Nagios XI Linux Agent) on your ActiveMQ server.

Before you download the plugin, there are some pre-requisite Perl packages required by the plugin. Please install then using the following command:

```
yum install -y perl-Switch perl-XML-Simple
```

These commands are for RHEL/CentOS, if you have a different distribution you'll need to ensure those Perl packages are installed.

Next you need to download the plugin to your ActiveMQ server, executing the following commands:

```
cd /usr/local/nagios/libexec/  
wget https://assets.nagios.com/downloads/nagiosxi/scripts/activemq_watch  
chmod +x /usr/local/nagios/libexec/activemq_watch
```

For this example the default admin account (called **admin**) with the password of **admin** is used by the plugin to access ActiveMQ. In your environment you will need to define the correct account and password by editing the **activemq_watch** file and change the following line:

```
my $page = get "http://admin:admin\@$address:$port/admin/xml/queues.jsp" or die "Cannot get  
XML file: $!\n";;
```

You will want to replace **admin:admin** with the *username:password* for your ActiveMQ server.

You will also need to set the port to what you have set up on your ActiveMQ server. Currently it defaults to 8161. Edit the **activemq_watch** file and change the following line to reflect the port set up on your ActiveMQ server:

```
my $port = "8161";
```

Test The Plugin Locally On The ActiveMQ Server

Now that these lines have been changed, test the plugin locally by running the following command:

```
/usr/local/nagios/libexec/activemq_watch -w 10 -c 20
```

The output should be similar to:

```
OK - test holding: 0 msgs OK - nagios.test holding: 2 msgs OK - test2 holding: 0 msgs
```

You should see the total number of messages in all of your current queues on the ActiveMQ server. In our example it matches our data in ActiveMQ as shown below:

Name ↑	Number Of Pending Messages	Number Of Consumers	Messages Enqueued	Messages Dequeued	Views	Operations
nagios.test	2	0	2	0	Browse Active Consumers atom rss	Send To Purge Delete
test	0	0	0	0	Browse Active Consumers atom rss	Send To Purge Delete
test2	0	0	0	0	Browse Active Consumers atom rss	Send To Purge Delete

As with standard plugin thresholds, it will return a warning if there are more than 10, and a critical if more than 20.

Configure NRPE To Execute The Plugin On The ActiveMQ Server

Next, you need to add a definition for this plugin to the `nrpe.cfg` on the ActiveMQ server by editing the NRPE configuration file:

```
vi /usr/local/nagios/etc/nrpe.cfg
```

And add the following definition into the list of commands near the bottom:

```
command[activemq_watch]=/usr/local/nagios/libexec/activemq_watch $ARG1$
```

Save and quit the file.

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You now need to restart xinetd to make our changes to the NRPE config active:

```
service xinetd restart
```

Checking The Plugin From Nagios XI

It is always a good practice to test your plugins from the Nagios XI server command line prior to testing them from Nagios XI web interface. Since you now have the plugin working on the ActiveMQ server, we will test checking the plugin from the command line on the Nagios XI server. Establish a terminal session to your Nagios XI server and execute the following commands:

```
cd /usr/local/nagios/libexec/  
./check_nrpe -H addr.of.activemq.server -c activemq_watch -a '-w 10 -c 20'
```

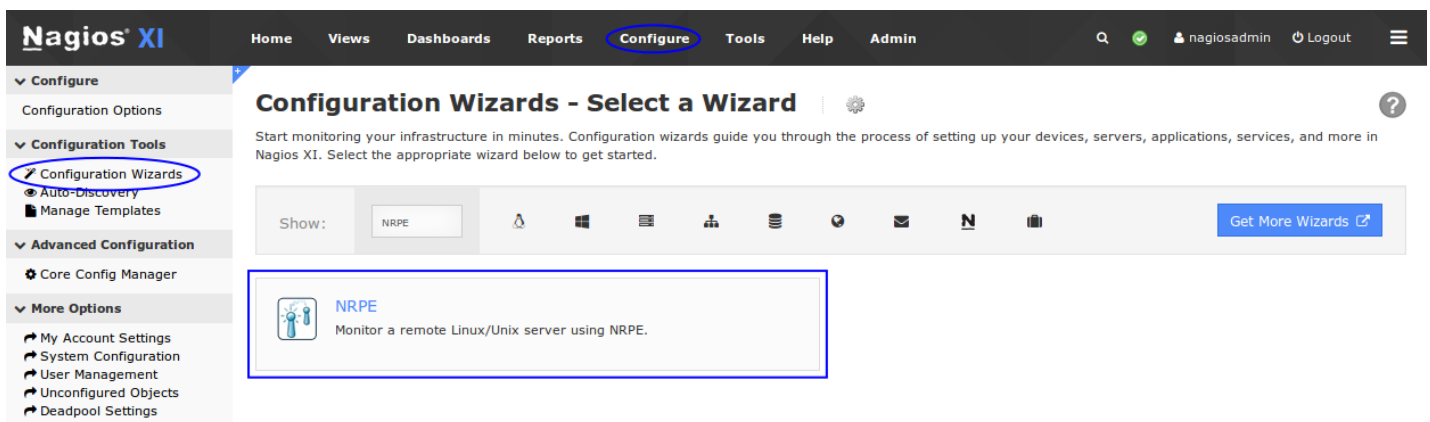
Remember to replace *addr.of.activemq.server* with the IP Address of your ActiveMQ server. The output returned should be similar to what is shown below.

```
[root@xi-r7x-x64 ~]# cd /usr/local/nagios/libexec/  
[root@xi-r7x-x64 libexec]# ./check_nrpe -H 10.25.8.1 -c activemq_watch -a '-w 10 -c 20'  
OK - test holding: 0 msgs OK - nagios.test holding: 2 msgs OK - test2 holding: 0 msgs
```

All that is left to do now is to define a host for the ActiveMQ server and a service for this check within Nagios XI. Once you have all of this done, you will be able to get up to date information on how many objects are in the ActiveMQ server's queue.

NRPE Monitoring Wizard

The NRPE wizard will create the host and service objects. Navigate via the top menu bar to **Configure > Run a configuring wizard**, and select the **NRPE** wizard. In the following screenshot you can see how the search field allows you to quickly find a wizard.



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On Step 1 you will be asked to supply the **address** of the ActiveMQ server.

You will also have to select the **Operating System**, in this case it is CentOS.

Click Next to progress to step 2.

Configuration Wizard: NRPE - Step 1

Server Information

IP Address:
The IP address or FQDNS name of the server you'd like to monitor.

Operating System:
The operating system running on the server you'd like to monitor.

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On step 2 you will configure all of the options for monitoring.

To start off with make sure a valid **Host Name** has been entered.

The NRPE Agent section can be ignored because you have already installed it.

The NRPE wizard allows you to specify which NRPE commands should be executed and monitored and what display name (service description) should be associated with each command.

In the screenshot to the right you can see the command has been defined for the `activemq_watch` check.

Click Next and then complete the wizard by choosing the required options in Step 3 – Step 5.

To finish up, click on **Finish** in the final step of the wizard.

This will create the new hosts and service and begin monitoring.

Configuration Wizard: NRPE - Step 2

Server Details

IP Address:

Operating System: CentOS

Host Name:
The name you'd like to have associated with this host.

NRPE Agent

Specify options that should be used to communicate with the remote NRPE agent.

Agent Download: [Download Agent](#)

Agent Install Instructions: [Agent Installation Instructions](#)

SSL Encryption:
Determines whether or not data between the Nagios XI server and NRPE agent is encrypted.
Note: Legacy NRPE installations may require that SSL support be disabled.

Server Metrics

Specify which services you'd like to monitor for the server.

Ping
Monitors the server with an ICMP Ping. Useful for watching network latency and general uptime.

NRPE Commands

Specify any remote NRPE commands that should be monitored on the server. Multiple command arguments should be separated with a space.

Display Name	Remote NRPE Command	Command Args
<input type="checkbox"/> Current Users	check_users	
<input type="checkbox"/> Current Load	check_load	
<input type="checkbox"/> Total Processes	check_total_procs	
<input checked="" type="checkbox"/> Queue Number	activemq_watch	'-w 10 -c 20'
<input type="checkbox"/>		

[Add Row](#) | [Delete Row](#)

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Once the wizard applies the configuration, click the **View status details for xxxxx** link to see the new host and services that were created.

Host	Service	Status	Duration	Attempt	Last Check	Status Information
ActiveMQ	Queue Number	Ok	4m 52s	1/5	2017-02-02 19:33:01	OK - test holding: 0 msgs OK - nagios.test holding: 2 msgs OK - test2 holding: 0 msgs

You are now monitoring your ActiveMQ server queue, it's as simple as that.

Common Issues

Problem: When testing the plugin from the command line of your Nagios XI server, you receive the following error:

```
CHECK_NRPE: Error - Could not complete SSL handshake.
```

Solution: Edit `/etc/xinetd.d/nrpe` and add the IP address of your Nagios XI server on the `only_from` line of the file. This is a space delimited list of IP addresses which can contact the ActiveMQ server using NRPE.

Save and quite the file and then restart the xinetd service with the following command.

```
Service xintd restart
```

The following documentation has more detailed troubleshooting steps:

<https://assets.nagios.com/downloads/nagiosxi/docs/NRPE-Troubleshooting-and-Common-Solutions.pdf>

Finishing Up

You are now ready to get up to date information on how many objects are in the ActiveMQ server's queue. If you have any questions regarding Nagios XI visit our Nagios Support Forums at:

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