

How to Monitor JBoss/Wildfly in Nagios XI 2024

Purpose

This document will cover how to monitor JBoss/WildFly servers using the JBoss/WildFly wizard and `check_jvm.jar` plugin within Nagios XI, so that users may be notified when JBoss/WildFly applications are behaving unexpectedly. For the remainder of this documentation JBoss refers to JBoss or WildFly.

Prerequisites

This document assumes you have the following:

- A remote JBoss server
- A Nagios XI server with a network route to the JBoss server

The `check_jvm.jar` monitoring plugin is executed either on the Nagios XI server or the JBoss server. Either method requires some prerequisite steps to be followed first which are outlined below.

Plugin Executed From Nagios XI Server

If you intend to run the plugin from the XI server, you'll need to install Java on the Nagios XI server. At the time of this writing, any Java 7+ implementation should work with the `check_jvm.jar` plugin, but only Oracle Java and OpenJDK have been tested. The following commands require you to establish a terminal session to your Nagios XI server as the root user.

CentOS / RHEL / Oracle Linux

To install OpenJDK 8 on CentOS / RHEL / Oracle Linux execute the following command:

```
yum install -y java-1.8.0-openjdk-devel
```

Debian / Ubuntu

To install OpenJDK 8 on Debian 9 / Ubuntu 16,18, 20 execute the following commands:

```
apt-get update  
apt-get install -y openjdk-8-jdk
```

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OpenJDK 8 is not included in Debian 10 packages. To install OpenJDK 8 on Debian 10, input these commands:

```
sudo apt-get update
sudo apt-get install software-properties-common
sudo apt update
sudo apt install apt-transport-https ca-certificates wget dirmngr gnupg software-properties-common
wget -qO - https://ad-adoptopenjdk.jfrog.io/adoptopenjdk/api/gpg/key/public | sudo apt-key add -
sudo add-apt-repository --yes https://ad-adoptopenjdk.jfrog.io/adoptopenjdk.deb/
sudo apt update
sudo apt install adoptopenjdk-8-hotspot
```

You will also need to copy the `jboss-client.jar` from your JBoss server to the Nagios XI server as this is required for the `check_jvm.jar` plugin. This documentation is using `/opt/wildfly/bin/client/jboss-client.jar` in the following examples and copying it to `/usr/local/nagios/libexec/`. In the following commands replace `xi_address` with the IP address of your Nagios XI server. To copy the file, establish a terminal session to your JBoss server and execute the following commands:

```
cd /opt/wildfly/bin/client/
scp jboss-client.jar root@xi_address:/usr/local/nagios/libexec/
```

Once these steps have been performed, please proceed to the Configuration Wizard section of this document.

Plugin Executed from Remote JBoss Server

If the plugin is to be remotely executed on the JBoss server, NCPA will need to be installed on the JBoss server as per the Installing NCPA documentation.

Once installed you will need to download the `check_jvm.jar` plugin to the NCPA's plugins folder. The plugin can be downloaded directly from the Nagios XI server, in the following commands replace `xi_address` with the IP address of your Nagios XI server. In a terminal session on the JBoss server execute the following commands:

```
cd /usr/local/ncpa/plugins/
wget http://xi_address/nagiosxi/includes/configwizards/java-as/plugins/check_jvm.jar
```

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The `check_jvm.jar` is a Java file that NCPA cannot run by default. To have NCPA associate `.jar` files with Java you will need to add a line to the `/usr/local/ncpa/etc/ncpa.cfg` file.

When being executed on the NCPA server you also need to specify the `java.class.path` directive which points to the location of the `jboss-client.jar` file on the JBoss server. This documentation is using `/opt/wildfly/bin/client/jboss-client.jar` in the following examples.

To edit the `ncpa.cfg` file execute the following command:

```
sudo vi /usr/local/ncpa/etc/ncpa.cfg
```

When using `vi`, to make changes press `i` on the keyboard first to enter insert mode and press **Esc** to exit insert mode.

Locate the [plugin directives] section by typing this command in:

```
/[plugin
```

Scroll down a few lines and find the following line:

```
.py = python $plugin_name $plugin_args
```

Insert the following line after the `.py` line:

```
.jar = java -Djava.class.path=/opt/wildfly/bin/client/jboss-client.jar:$plugin_name GenericASCheck $plugin_args
```

Note: The lines above are one long line, they are wrapped in this documentation due to the length of the command.

When you have finished, save the changes in `vi` by typing:

```
:wq
```

Press **Enter**.

The last step required is to restart the `ncpa_listener` service. The command to do this may vary depending on your operating system (full details can be found in the Installing NCPA documentation). In this example to restart the service on CentOS 7 would be:

```
systemctl restart ncpa_listener.service
```

Once these steps have been performed, please proceed to the **Configuration Wizard** section

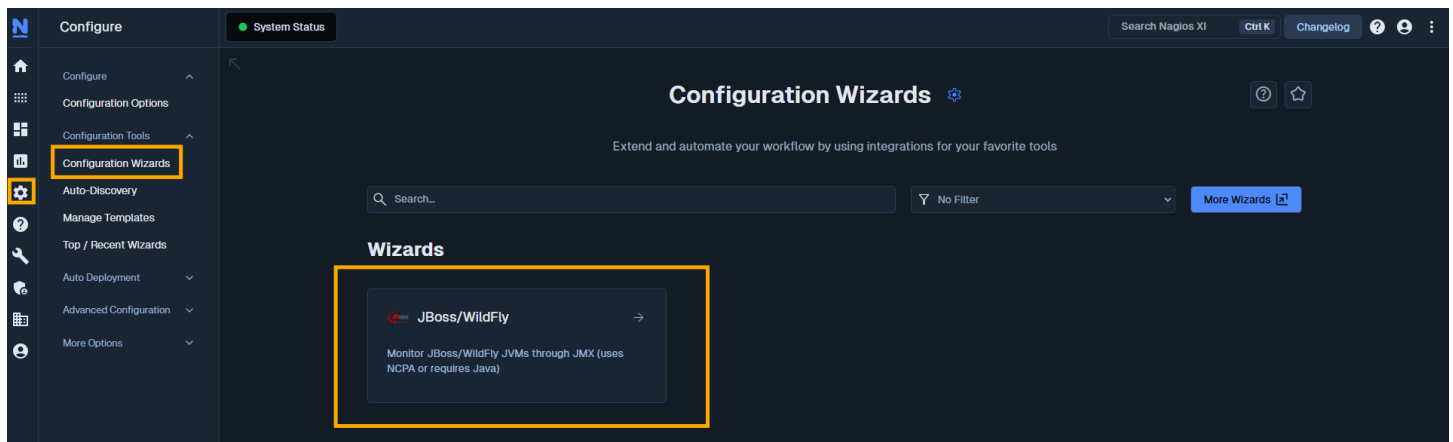
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of this document.

The JBoss Configuration Wizard

The JBoss config wizard uses JMX to retrieve JVM and system statistics and compare them to the thresholds you set in the wizard. Checks can either be combined into one service or separated.

1. To begin using the JBoss configuration wizard, navigate via the top bar to **Configure > Configuration Wizards**. Then, select the JBoss/WildFly wizard. In the following screenshot you can see how the search field allows you to quickly find a wizard.



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JBoss/WildFly Configuration Wizard Step 1

Plugin and Agent Setup

If you use a direct JMX connection between Nagios XI and your application server, you will only need to ensure that your server is remote-JMX-capable. Otherwise, you will need to install NCPA and the Application Server Plugin on your application server.

1. [Download and install the latest version of NCPA](#)
2. [Install the Java Application Server Plugin](#)

[Additional documentation for NCPA](#) and for [monitoring application servers](#)

JBoss Server Information

* IP Address

* Access JBoss Server via

JMX

* Service URL ⓘ

* JBoss Username ⓘ

* JBoss Password ⓘ

Next >

2. **Step 1** requires you to provide the details for the Nagios XI server to connect to JBoss via JMX. In JBoss Server Information, specify the following:
- IP Address is the network address of the JBoss server
 - Access JBoss Server via asks you how to access JBoss statistics. JMX is when Nagios XI connects instead of using NCPA to execute the plugin remotely.

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- NCPA Listener Port and NCPA Token only appear when you select the NCPA access method. You defined these options when installing NCPA earlier.
- Service URL is the URL required to form the JMX connection, this will be of the form of `service:jmx:remote+http://:`
- **JBoss Username and JBoss Password** are the credentials required to access the JVM's internal statistics



JBoss/WildFly Configuration Wizard Step 2

Remote Host Details

IP Address
10.10.10.14

Host Name ⓘ
10.10.10.14

Service Description
JBoss JVM Statistics

Classpath ⓘ
/usr/local/nagios/libexec/jboss-client.jar

Combine into one service









3. After making all your selections click **Next** to proceed to Step 2.
4. **Step 2** provides you with multiple monitoring options.
5. In **Remote Host Details** you have the choice of defining the Host Name to your requirements. All the services created by this wizard will be assigned to this newly created host. You also have the option to combine the checks into one service.
6. If you have selected NCPA then the **Classpath** field will not be displayed.

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Heap-Allocated Memory

Measure these statistics in:









GIB

<input checked="" type="checkbox"/> Heap-Allocated Memory ⓘ	 16	 30
<input type="checkbox"/> Eden Space ⓘ		
<input type="checkbox"/> Survivor/Tenured Space ⓘ		
<input type="checkbox"/> Old Gen ⓘ		

Non-Heap-Allocated Memory

Measure these statistics in:

GIB

<input type="checkbox"/> Simple Non-Heap-Allocated Memory ⓘ		
<input type="checkbox"/> Code Cache ⓘ		
<input type="checkbox"/> Compressed Class Space ⓘ		
<input checked="" type="checkbox"/> Metaspace ⓘ	 32	 64

7. If you are using JMX then you will need to define the location of the `jboss-client.jar` file in the **Classpath** field as per the [Plugin Executed from Nagios XI Server](#) steps earlier in this documentation.

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The screenshot shows the 'Other System Statistics' configuration page in Nagios XI. It features a list of five monitoring options, each with a checkbox, a name, and an information icon. Below each option are two input fields for warning and critical thresholds, each with a corresponding status icon (yellow triangle for warning, red exclamation mark for critical).

Option	Warning Threshold	Critical Threshold
<input checked="" type="checkbox"/> JVM CPU Usage ⓘ	50 %	70 %
<input checked="" type="checkbox"/> System CPU Usage ⓘ	70 %	90 %
<input checked="" type="checkbox"/> Uptime ⓘ	1500:	300:
<input type="checkbox"/> Class Count ⓘ	10000	50000
<input type="checkbox"/> Thread Count ⓘ	150	190

Navigation buttons: < Back, Next >

8. The **Heap-Allocated Memory** and **Non-Heap-Allocated Memory** options should be self-explanatory to anyone familiar with Java; simply check and un-check the relevant boxes to determine which checks to run and enter your desired warning and critical thresholds.
9. The **Other System Statistics** options should likewise be self-explanatory, simply check and un-check the relevant boxes to determine which checks to run and enter your desired warning and critical thresholds.
10. Click **Next** and then complete the wizard by choosing the required options in Step 3 – Step 5.
11. To finish up, click on **Finish** in the final step of the wizard. Once the wizard applies the configuration, click the View status details for link to see the new service(s) that have been created.

The screenshot shows the 'Service Status for this Host' page in Nagios XI. It displays a table with columns for Service, Status, Duration, Attempt, Last Check, and Status Information. The table shows one service, 'JBoss JVM Statistics', which is currently in an 'OK' status.

Service	Status	Duration	Attempt	Last Check	Status Information
JBoss JVM Statistics	OK	1m 2s	1/5	2024-12-04 04:18:45	OK: 5 checks returned OK

More Information:

[Using Configuration Wizards](#)

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Finishing Up

This completes the documentation on monitoring JBoss/WildFly in Nagios XI. If you have additional questions or other support-related questions, please visit us at our Nagios Support Forum, Nagios Knowledge Base, or Nagios Library:

[Visit Nagios Support Forum](#)

[Visit Nagios Knowledge Base](#)

[Visit Nagios Library](#)