

How To Monitor Apache Tomcat In Nagios XI 2024 And 2026

Purpose

This document will cover how to monitor Apache Tomcat servers using the Apache Tomcat Wizard and `check_tomcat.jar` plugin within Nagios XI, so that users may be notified when Java applications are behaving unexpectedly.

Prerequisites

This document assumes you have the following:

- A remote Apache Tomcat server with JMX enabled
- A Nagios XI server with a network route to the Apache Tomcat server

The `check_tomcat.jar` monitoring plugin is executed either on the Nagios XI server or the Apache Tomcat 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_tomcat.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://adoptopenjdk.jfrog.io/adoptopenjdk/api/gpg/key/public | sudo apt-  
key add -
```

```
sudo add-apt-repository --yes https://adoptopenjdk.jfrog.io/adoptopenjdk/deb/
```

```
sudo apt update
```

```
sudo apt install adoptopenjdk-8-hotspot
```

Once these steps have been performed, please proceed to the [Configuration Wizard](#) section of this document.

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Plugin Executed from Remote Tomcat Server

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

Once installed you will need to download the `check_tomcat.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 Tomcat server execute the following commands:

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

The `check_tomcat.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.

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 -jar $plugin_name $plugin_args
```

When you have finished, save the changes in `vi` by typing `:wq` and press **Enter**.

If you have several versions of `java` installed, you may want to use an absolute path to the binary in place of `java`. If you need to load additional classes for your plugins (not required for JMX over RMI), you may want to specify a classpath using `-cp` between `-jar` and `$plugin_name`.

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:

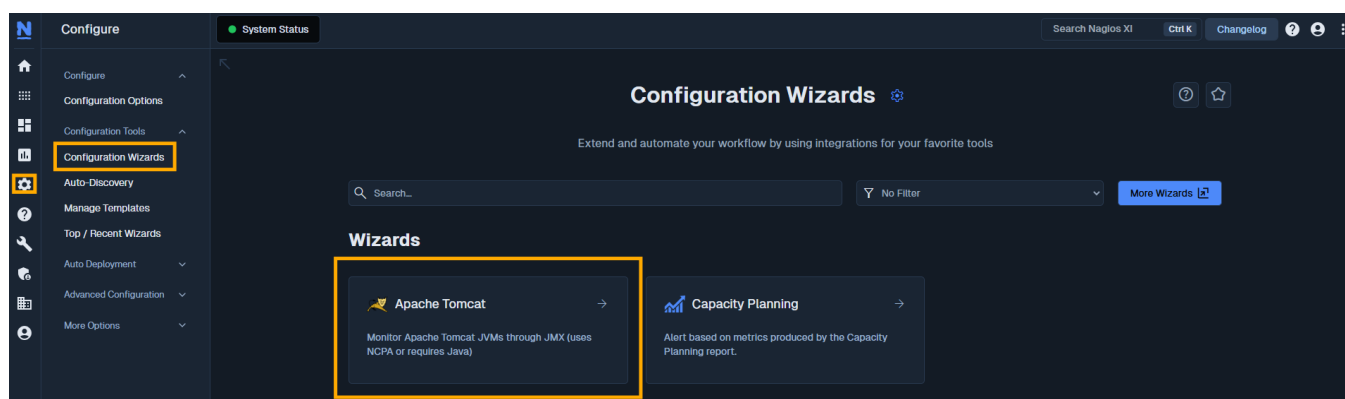
```
systemctl restart ncpa_listener.service
```

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The Apache Tomcat Configuration Wizard

The **Apache Tomcat Wizard** uses JMX (generally over RMI) 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 Apache Tomcat Wizard, navigate to **Configure > Configuration Wizards**. Then, select the **Apache Tomcat Wizard**. In the following screenshot you can see how the search field allows you to quickly find a wizard



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2. In **Step 1** provide the details for the Nagios XI server to connect to Tomcat via JMX. Under **Tomcat Server Information**, specify the following:
 - a. **IP Address** is the network address of the Tomcat server
 - b. **Access Tomcat Server via** asks you how to access Tomcat statistics. **JMX** is when Nagios XI connects instead of using NCPA to execute the plugin remotely.
 - c. **NCPA Listener Port** and **NCPA Token** only appear when you select the NCPA access method. You defined these options when installing NCPA earlier.
 - d. **Service URL** is the URL required to form the JMX connection. For JMX over RMI, this will be of the form `service:jmx:rmi:///jndi/rmi://<host>:<port>/jmxrmi`, except in cases where the RMI server is separate from the Tomcat instance.
 - e. **Tomcat Username** and **Tomcat Password** are the credentials required to access the JVM's internal statistics

Apache Tomcat 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](#)

Tomcat Server Information

- * IP Address
- * Access Tomcat Server via
- * Service URL ⓘ
- * Tomcat Username ⓘ
- * Tomcat Password ⓘ

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3. After making all your selections click **Next** to proceed to **Step 2**
4. **Step 2** provides you with multiple monitoring options.
 - a. 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.



The screenshot shows the 'Apache Tomcat Configuration Wizard' interface, specifically 'Step 2: Remote Host Details'. The form includes the following fields and options:

- IP Address:** 10.25.9.1
- Host Name:** Tomcat
- Service Description:** Tomcat JVM Statistics
- Classpath:** Enter Classpath
- Combine into one service**

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- b. The **Heap-Allocated Memory** and **Non-Heap-Allocated Memory** options are self-explanatory, simply check and un-check the relevant boxes to determine which checks to run and enter your desired warning and critical thresholds.

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

- c. For the **Global Request Processors** section, provide the name of each request processor you wish to monitor. These names vary from server to server and from version to version of Tomcat. The correct names can always be found by opening a **jconsole** connection to the Tomcat server, clicking the **MBeans** tab, and then **choosing Catalina > GlobalRequestProcessor**. Each of the resulting subdirectories is named for one of the request processors.

Global Request Processors

To find your global request processors' MBean Names, access the Tomcat instance with Jconsole.

Request Processor MBean Name	Check Type	Warning Threshold	Critical Threshold
	Requests Per Minute		

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

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- d. The **Other System Statistics** options are self-explanatory, simply check and uncheck the relevant boxes to determine which checks to run and enter your desired warning and critical thresholds.

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

5. Click **Next** and then complete the wizard by choosing the required options in **Step 3 – Step 5**.
6. To finish up, click **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 services that have been created.

More Information

[Understanding and Using Configuration Wizards 2024 and 2026](#)

Finishing Up

This completes the documentation on how to monitor Apache Tomcat in Nagios XI 2024 and 2026. If you have additional questions or other support-related questions, please visit the Nagios Support Forum, Nagios Documentation Hub, or Nagios Library:

[Visit Nagios Support Forum](#)

[Visit Documentation Hub](#)

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