Windows Installation

On this page:

NetVizura needs dedicated server

For security reason, make sure that your server or VM doesn't have anything installed on it before NetVizura installation. Other software of services running on the same server can impact installation.

NetVizura needs correct time

Before installing NetVizura make sure to set the time on your server correctly. Time change after the installation will invalidate the license!

NetVizura installation needs internet access

NetVizura requires working connection to the internet to install required dependent software. After installation is successful you can turn off internet access for NetVizura server.

For the NetVizura 5.x, having MS Edge, Firefox or Chrome browser is **mandatory requirement**.

Before installing NetVizura you will have to install: **Java 1.8, Tomcat 7 or higher and PostgreSQL 12 or higher**, in that order. The installation process has been tested on Windows Server 2008 R2 (64bit), Windows Server 2012 R2 (64bit), Windows Server 2016 R2 (64bit) and Windows Server 2019 (64bit) and Windows Server 2022 (64bit).

Installation Steps

To install NetVizura on Windows follow these steps:

Step 1: Download and install Oracle Java 8 from Oracle official website www.oracle.com/technetwork/java/javase/downloads/index.html , or if you don't have support agreement with Oracle,you can download openJDK build from :https://github.com/ojdkbuild/ojdkbuild . In openJDK case,you should download .msi file eg. https://github.com/ojdkbuild/ojdkbuild/releases/download/1.8.0.212-1/java-1.8.0-openjdk-1.8.0.212-1.b04.ojdkbuild.windows.x86_64.msi .

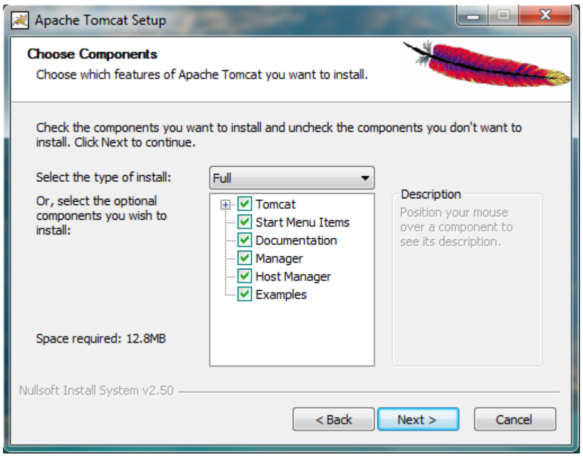
Only 64-bit Java is supported, so choose Windows x64 installer. We recommend JDK package because it helps with troubleshooting.

Step 2: Download and install Tomcat 7 - 9 (Tomcat 10 is not supported currently) as a service from Tomcat official website tomcat.apache.org. 32-bit/64-bit Windows Service Installer is available on the downloads page.

- Make sure to install Tomcat as a service, otherwise NetVizura installation won't be able to complete successfully.
- Make sure you have exactly one version of Tomcat installed on your system, otherwise application might not work as expected.

Note that NetVizura demands postgresql installer which includes Microsoft Visual C++ pre-installation. Make sure that the postgresql installer you have downloaded installs Microsoft Visual C++ before postgres installation starts. Otherwise, you will need to install it manually.

When prompted for the installation type, choose Full installation. This will enable Tomcat to start on boot. Server Shutdown port should be set to 8005.



Apache Tomcat Setup

Choose Components

Choose which features of Apache Tomcat you want to install.

Check the components you want to install and uncheck the components you don't want to install. Click Next to continue.

Select the type of install: Full

Or, select the optional components you wish to install:

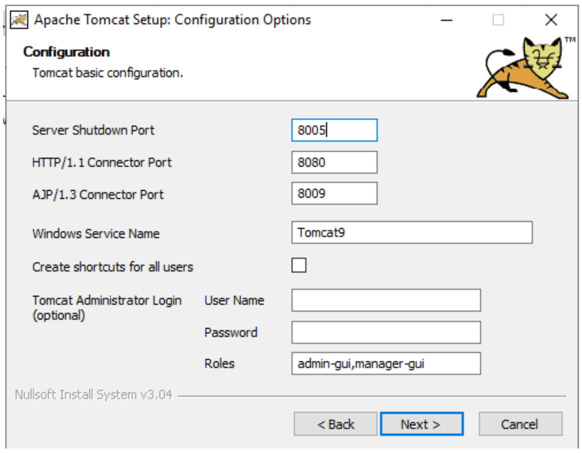
- ☑ Tomcat
- ☑ Start Menu Items
- ☑ Documentation
- ☑ Manager
- ☑ Host Manager
- ☑ Examples

Description

Position your mouse over a component to see its description.

Space required: 12.8MB

Nullsoft Install System v2.50



Apache Tomcat Setup: Configuration Options

Configuration

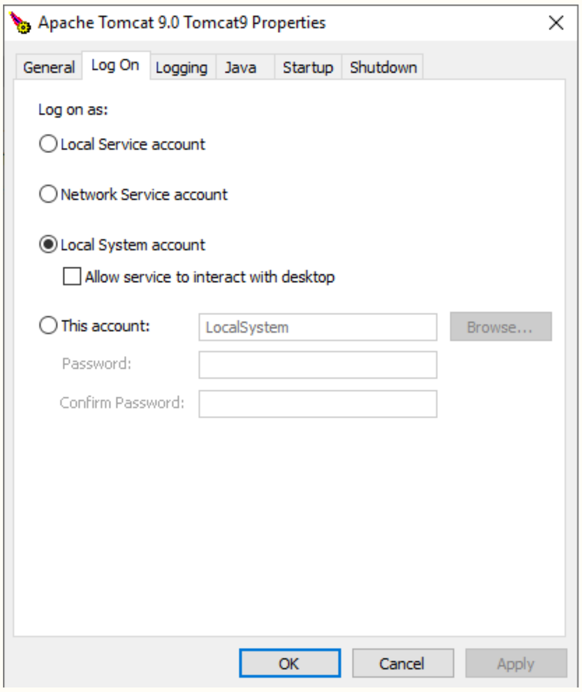
Tomcat basic configuration.

Server Shutdown Port		8005
HTTP/1.1 Connector Port		8080
AJP/1.3 Connector Port		8009
Windows Service Name		Tomcat9
Create shortcuts for all users		□
Tomcat Administrator Login (optional)	User Name	
	Password	
	Roles	admin-gui,manager-gui

Nullsoft Install System v3.04

Windows 2019 users

After the installation is complete you need to set Local System account for the application,and restart it.



Apache Tomcat 9.0 Tomcat9 Properties

Log on as:

○ Local Service account

○ Network Service account

● Local System account

□ Allow service to interact with desktop

○ This account: LocalSystem

Password:

Confirm Password:

Step 3: Download and install PostgreSQL 12 or higher version from PostgreSQL official website https://www.enterprisedb.com/downloads/postgres-postgresql-downloads

> - While installing PostgreSQL you will be prompted for password; make sure that you type in **postgres**
> - Make sure you have exactly one version of PostgreSQL installed on your system, otherwise NetVizura might not work as expected or at all.

Step 4: Install Elasticsearch

Download the Elasticsearch installer from: https://www.netvizura.com/files/products/general/downloads/elasticsearch-7.17.8.exe
Execute the file with run as admin , and follow the installation.

Step 5: Download NetVizura Windows Installer from NetVizura website and run installer with administrative privileges

Step 6: Follow the installation steps

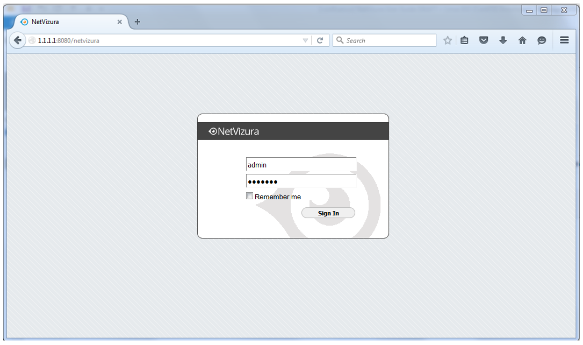
Step 7: Verify installation

Now you can go to NetVizura web interface *http://<netvizura_server_ip>:8080/netvizura*.

Default login credentials:

- Username: **admin**
- Password: **admin01**

For example, if your server IP is 1.1.1.1 then point your browser to *http://1.1.1.1:8080/netvizura* like in the screenshot below:



1.1.1.1:8080/netvizura

admin

•••••••

□ Remember me

Post Install Steps

After installation tweaking of configuration files is required in order to utilize the installed RAM to the fullest extent. The main consumers of RAM are operating system, PostgreSQL database and Tomcat. General rule for distributing memory is to split it in ratio 2:1 between PostgreSQL and Tomcat with 1 GB or more reserved for operating system. For instance:

Installed RAM	PostgreSQL	Tomcat	OS
4 GB	2 GB	1 GB	1 GB
16 GB	10 GB	5 GB	1 GB

Tweaking PostgreSQL

Tweaking PostgreSQL for best performance is a topic on which many books were written, but the following are some common sense suggestions. For the curious ones recommended reads (among countless others) are PostgreSQL Optimization Guide and PostgreSQL Tuning Guide.

In order to apply following tweaks edit file `postgresql.conf`, this file is usually located in PostgreSQL data folder. You will need to **restart** the PostgreSQL service after done editing. Almost all of the following parameters are commented with carron character (#). Be aware that if you comment out the parameter that has been changed, PostgreSQL will revert to the default value.

In the following example it is assumed that 4 GB of RAM is allocated for PostgreSQL.

> Before changing any parameters in postgresql configuration read the provided comments in the table below for more information regarding specific parameter.

parameter	recommended value	comment
`max_connections`	30	NetVizura rarely uses more than 10 connections simultaneously, but it is good to have some reserve.
`shared_buffers`	1024MB	The recommended amount is `RAM/4.`
`effective_cache_size`	2048MB	The recommended amount is `RAM/2`, possibly even `RAM * 3 /4.`
`checkpoint_completion_target`	0.7	This parameter can take values between 0 and 1. Default is set to 0.5, which means that the write phase of checkpoint process will take half of the checkpoint timeout time. Increasing this value will provide more time for checkpoint write phase to finish, thus decreasing IO usage.
`work_mem`	32-64MB	The formula used is `max_connections*work_mem <= RAM/4`, but using a bit more is still fine.
`maintenance_work_mem`	256MB	Speeds up DB self clean process. Usually 4*work_mem or something in that ballpark
`wal_buffers`	16MB	Increasing `wal_buffers` is helpful for write-heavy systems. Usually this is 16MB.
`min_wal_size`	1GB	If WAL files are under this size, files will be recycled for future checkpoints.
`max_wal_size`	2GB	Maximum size of WAL files, after that CHECKPOINT command is be issued and files are written to disk.
`effective_io_concurrency`	2	Number of simultaneous request that can be handled efficiently by disk subsystem.
`full_page_writes`	off	Turning this parameter off speeds up normal operation, but might lead to either unrecoverable data corruption, or silent data corruption, after power outage, OS or HDD failure. The risks are similar to turning off `fsync`, though smaller.
`fsync`	off	Don't wait for HDD to finish previous *write* operation. This brings the most benefit, but if there is power outage, OS or HDD failure in exact instant when PSQL issues write command to HDD, that data will be lost and the DB itself could be corrupted. On the other hand, DB can issue several magnitude more write commands in the same time period and consider all these done, thus improving write performance immensely.
`synchronous_commit`	off	Similarly to "fsync" but with less benefit.
Parallel system optimization (PSQL => 9.6)		
`max_worker_processes`	2	Number of cores
`max_parallel_workers_per_gather`	1	Number of cores/2
`(PSQL > 9.6) max_parallel_workers`	2	Number of cores

Elasticsearch Memory Optimization

By default,we set memory limit for Elasticsearch to 30% of RAM. If you need to set it to any other value, edit the file: /etc/elasticsearch/jvm.options and set values -Xms and Xmx to desired size. After that restart the Elasticsearch and Tomcat services.

Tomcat Memory Allocation

During installation NetVizura automatically allocates memory for Tomcat process. The amount allocated to Tomcat process is calculated according to the formula:

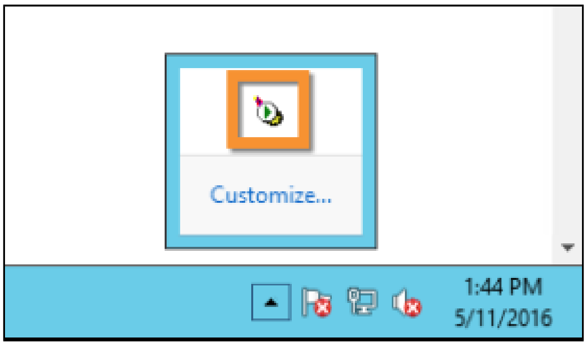
$(\mathrm{RAM}_{\mathrm{total}} - 1\mathrm{GB}) / 3$ but no less than 1GB.

For instance:

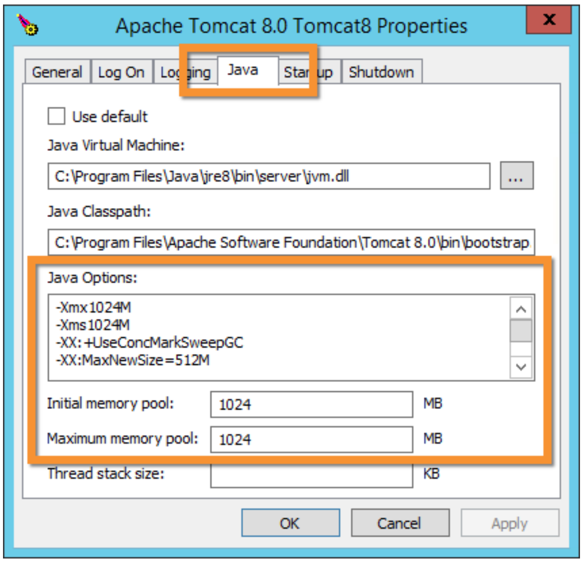
Total RAM	Tomcat
3 GB	1 GB
4 GB	1 GB
16 GB	5 GB

However, if you need to tweak Tomcat RAM allocation differently (the example for 2048MB):

1. Double click on Apache Tomcat Properties in system tray



2. In Java tab under Java options modify the `-Xmx` parameter to allocate additional memory to Tomcat. Additionally, set parameter `-Xms` to the same amount. Also set Initial memory pool and Maximum memory pool to the same amount. This should look like on picture below.



□ Use default

Java Virtual Machine: C:\Program Files\Java\jre8\bin\server\jvm.dll

Java Classpath: C:\Program Files\Apache Software Foundation\Tomcat 8.0\bin\bootstrap

Java Options:

```
-Xmx1024M
-Xms1024M
-XX:+UseConcMarkSweepGC
-XX:MaxNewSize=512M
```

Initial memory pool: 1024 MB

Maximum memory pool: 1024 MB

Thread stack size: KB

3. Back to the General tab, click Stop and Start to restart Tomcat.