# How to Install Tomcat 9 on CentOS 8

Apache Tomcat is an open-source implementation of the Java Servlet, JavaServer Pages, Java Expression Language, and Java WebSocket technologies. It is one of the most widely adopted applications and web servers in the world today. Tomcat is simple to use and has a robust ecosystem of add-ons.

## **Installation Tutorial**

This tutorial explains how to install Tomcat 9.0 on CentOS 8.

## **Installing Java**

Tomcat 9 requires Java SE 8 or later. We will install OpenJDK 11, the open-source implementation of the Java Platform.

Run the following command as root or user with sudo privileges to install Java:

```
# dnf install java-11-openjdk-devel
```

Once the installation is complete, verify it by checking the Java version:

```
# java -version
```

The output should look something like this:

```
openjdk version "11.0.5" 2019-10-15 LTS
OpenJDK Runtime Environment 18.9 (build 11.0.5+10-LTS)
OpenJDK 64-Bit Server VM 18.9 (build 11.0.5+10-LTS, mixed mode, sharing)
```

# **Creating a System User**

Running Tomcat under the root user is a security risk. We'll create a new system user and group with home directory /opt/tomcat that will run the Tomcat service. To do so, enter the following command:

```
# useradd -m -U -d /opt/tomcat -s /bin/false tomcat
```

# **Downloading Tomcat**

Tomcat binary distribution is available for download from the Tomcat downloads page.

At the time of writing, the latest Tomcat version is 9.0.30. Before continuing with the next step, check the Tomcat 9 download page to see if a newer version is available.

Download the Tomcat zip file with wget to the /tmp directory:

```
# VERSION=9.0.30
# wget
https://www-eu.apache.org/dist/tomcat/tomcat-9/v${VERSION}/bin/apache-tomcat
-${VERSION}.tar.gz -P /tmp
```

Once the download is complete, extract the tar file to the /opt/tomcat directory:

```
# tar -xf /tmp/apache-tomcat-${VERSION}.tar.gz -C /opt/tomcat/
```

Tomcat is updated on a regular basis. To have more control over versions and updates, we'll create a symbolic link called latest, that points to the Tomcat installation directory:

```
# ln -s /opt/tomcat/apache-tomcat-${VERSION} /opt/tomcat/latest
```

The system user that was previously created, must have access to the tomcat installation directory. Change the directory ownership to user and group tomcat:

```
# chown -R tomcat: /opt/tomcat
```

Make the shell scripts inside the bin directory executable:

```
# sh -c 'chmod +x /opt/tomcat/latest/bin/*.sh'
```

These scripts are later used to start and stop Tomcat from the systemd unit file.

# Creating a Systemd Unit File

Instead of manually starting and stopping the Tomcat server, we'll set it to run as a service. Open your text editor and create a tomcat.service unit file in the /etc/systemd/system/ directory:

```
# vim /etc/systemd/system/tomcat.service
```

Paste the following content:

```
[Unit]
Description=Tomcat 9 servlet container
After=network.target

[Service]
Type=forking

User=tomcat
Group=tomcat
```

https://michu-it.com/wiki/ Printed on 2025/03/13 06:50

```
Environment="JAVA_HOME=/usr/lib/jvm/jre"
Environment="JAVA_OPTS=-Djava.security.egd=file://dev/urandom"

Environment="CATALINA_BASE=/opt/tomcat/latest"
Environment="CATALINA_HOME=/opt/tomcat/latest"
Environment="CATALINA_PID=/opt/tomcat/latest/temp/tomcat.pid"
Environment="CATALINA_OPTS=-Xms512M -Xmx1024M -server -XX:+UseParallelGC"

ExecStart=/opt/tomcat/latest/bin/startup.sh
ExecStop=/opt/tomcat/latest/bin/shutdown.sh

[Install]
WantedBy=multi-user.target
```

Save and close the file.

Notify systemd that a new service file exists, by typing:

```
# systemctl daemon-reload
```

Enable and start the Tomcat service:

```
# systemctl enable --now tomcat
```

Check the service status; the output should show that the Tomcat server is enabled and running:

```
# systemctl status tomcat
```

```
• tomcat.service - Tomcat 9 servlet container
   Loaded: loaded (/etc/systemd/system/tomcat.service; enabled; vendor
preset: disabled)
   Active: active (running) since Wed 2020-01-15 20:38:07 UTC; 30s ago
   Process: 3957 ExecStart=/opt/tomcat/latest/bin/startup.sh (code=exited, status=0/SUCCESS)
...
```

# **Configuring Firewall**

If your server is protected by a firewall and you want to access the tomcat interface from the outside of the local network, you need to open port 8080.

Use the following commands to open the necessary port:

```
# firewall-cmd --permanent --zone=public --add-port=8080/tcp
sudo firewall-cmd --reload
```

Typically, when running Tomcat in a production environment, you should use a load balancer or

reverse proxy. It's a best practice to allow access to port 8080 only to your internal network.

# **Additional: Configuring Tomcat Web Management Interface**

At this point, you should be able to access Tomcat with a web browser on port 8080. The web management interface is not accessible because we have not created a user yet.

Tomcat users and roles are defined in the tomcat-users.xml file.

If you open the file, you will notice that it is filled with comments and examples describing how to configure the file.

```
# vim /opt/tomcat/latest/conf/tomcat-users.xml
```

Tomcat users are defined the user in the tomcat-users.xml file. To create a new user that can access the tomcat web interface (manager-gui and admin-gui), edit file as shown below. Make sure you change the username and password to something more secure:

```
<tomcat-users>
<!--
    Comments
-->
    <role rolename="admin-gui"/>
    <role rolename="manager-gui"/>
    <user username="admin" password="admin_password" roles="admin-gui,manager-gui"/>
</tomcat-users>
```

By default Tomcat web management interface is configured to allow access only from the localhost.

If you need to access the web interface from anywhere open the following files and comment or remove the lines highlighted in yellow:

```
# vim /opt/tomcat/latest/webapps/manager/META-INF/context.xml
```

# vim /opt/tomcat/latest/webapps/host-manager/META-INF/context.xml

https://michu-it.com/wiki/ Printed on 2025/03/13 06:50

```
<Context antiResourceLocking="false" privileged="true" >
    <Valve className="org.apache.catalina.valves.RemoteAddrValve"
        allow="127\.\d+\.\d+\.\d+\!:1|0:0:0:0:0:0:0:0:1|41.41.41.41" />
</Context>
```

# vim /opt/tomcat/latest/webapps/host-manager/META-INF/context.xml

```
<Context antiResourceLocking="false" privileged="true" >
   <Valve className="org.apache.catalina.valves.RemoteAddrValve"
        allow="127\.\d+\.\d+\.\d+\::1|0:0:0:0:0:0:0:0:1|41.41.41.41" />
</Context>
```

The list of allowed IP addresses is a list separated with vertical bar |. You can add single IP addresses or use a regular expressions.

Once done, restart the Tomcat service for changes to take effect:

```
# systemctl restart tomcat
```

# **Testing Management Interface Installation**

Open your browser and type: http://<your\_domain\_or\_IP\_address>:8080

Upon successful installation, a screen similar to the following should appear:

13:30

Home Documentation Configuration Examples Wiki Mailing Lists Find Help Apache Tomcat/9.0.13 APACHE http://www.apache.org/

If you're seeing this, you've successfully installed Tomcat. Congratulations!



Recommended Reading:

Security Considerations HOW-TO **Manager Application HOW-TO** Clustering/Session Replication HOW-TO

Server Status Manager App Host Manager

### **Developer Quick Start**

Tomcat Setup **First Web Application** 

Realms & AAA **JDBC DataSources** 

**Examples** 

**Servlet Specifications Tomcat Versions** 

## **Managing Tomcat**

For security, access to the manager webapp is restricted. Users are defined in:

\$CATALINA HOME/conf/tomcat-users.xml

In Tomcat 9.0 access to the manager application is split between different users. Read more...

**Release Notes** 

Changelog

Migration Guide

**Security Notices** 

#### Documentation

## **Tomcat 9.0 Documentation** Tomcat 9.0 Configuration

#### **Tomcat Wiki**

Find additional important configuration information in:

\$CATALINA HOME/RUNNING.txt

Developers may be interested in:

Tomcat 9.0 Bug Database

Tomcat 9.0 JavaDocs

Tomcat 9.0 SVN Repository

### **Getting Help**

#### FAQ and Mailing Lists

The following mailing lists are available:

tomcat-announce Important announcements, releases, security vulnerability notifications. (Low volume).

tomcat-users User support and discussion

## taglibs-user

User support and discussion for Apache **Taglibs** 

#### tomcat-dev

Development mailing list, including commit messages

#### Other Downloads

Tomcat Connectors Tomcat Native Taglibs Deployer

#### Other Documentation

Tomcat Connectors mod\_jk Documentation Tomcat Native Deployer

#### Get Involved

Overview **SVN Repositories** Mailing Lists Wiki

#### Miscellaneous

Contact Legal Sponsorship **Thanks** 

#### Apache Software Foundation

Who We Are Heritage Apache Home Resources

Copyright ©1999-2018 Apache Software Foundation. All Rights Reserved

Tomcat web application manager dashboard allows you to deploy, undeploy, start, stop, and reload your applications. It is available at:

http://<your domain or IP address>:8080/manager/html.

https://michu-it.com/wiki/ Printed on 2025/03/13 06:50





# **Tomcat Web Application Manager**

Message: 0	К									
f										
Manager										
<u>List Applications</u>		<u>HTML Manager Help</u>		<u>N</u>	<u>lanager Help</u>	Server Status				
7	on-									
Applications										
Path	Version	Display Name	Running	Sessions	Commands					
Į.	None specified	Welcome to Tomcat	true	<u>o</u>	Start Stop Reloa	Undeploy				
		Welcome to lomeat	lac		Expire sessions wit	h idle ≥ 30 minutes				
/docs	None specified			<u>0</u>	Start Stop Reloa	d Undeploy				
		Tomcat Documentation	true		Expire sessions wit	h idle ≥ 30 minutes				
/examples	None specified	STATE VOLUME NA ACQUIANCINO AA		<u>0</u>	Start Stop Reloa	d Undeploy				
		Servlet and JSP Examples	true		Expire sessions wit	h idle ≥ 30 minutes				
/host-manager	None specified			<u>0</u>	Start Stop Reloa	d Undeploy				
		Tomcat Host Manager Application	n true		Expire sessions wit					
	None specified To			2	Start Stop Reload					
<u>/manager</u>		Tomcat Manager Application	true		Expire sessions wit	The same of the sa				
L,					Expire sessions with	male 2 50 minutes				
Deploy						T T				
Deploy directo	ory or WAR file	located on server								
Context Path (required):										
	XML C	onfiguration file URL:								
		/AR or Directory URL:								
Deploy										
WAR file to deploy										
Select WAR file to upload Choose File No file chosen										
	Deploy									
Schol										

Tomcat virtual host manager dashboard allows you to create, delete, and manage Tomcat virtual hosts. It is available at: http://<your\_domain\_or\_IP\_address>:8080/host-manager/html.

update: 2020/01/23 redhat:web-server-redhat:tomcat-9-on-redhat https://michu-it.com/wiki/redhat/web-server-redhat/tomcat-9-on-redhat?rev=1579782627





# **Tomcat Virtual Host Manager**

Message:	ок							
Host Mana	ager							
List Virtual Hosts		HTML Hos	t Manager Help	<u>Host Manager Help</u>	Server Status			
L. 181		1 //						
Host name	е							
Host name		Host aliases	Commands					
<u>localhost</u>			Host Manager installed - commands disabled					
Add Virtual Host								
Host								
Name:		ne:						
Aliases:		es:						
App base:								
A CONTRACTOR CONTRACTO								
AutoDeploy								
DeployOnStartup								
DeployXML								
UnpackWARs								
Manager App								
	CopyX	The state of the s						
		Add						
Persist configuration								
All Save of	All Save current configuration (including virtual hosts) to server.xml and per web application context.xml files							

Last update: 2020/01/23 13:30

Printed on 2025/03/13 06:50 https://michu-it.com/wiki/