[How to Install Apache Tomcat in RHEL 8 (tecmint.com)](https://www.tecmint.com/install-apache-tomcat-in-rhel-8/)

**How to Install Apache Tomcat in RHEL 8**

[**Aaron Kili**](https://www.tecmint.com/author/aaronkili/)**October 4, 2019 Categories**[**RedHat**](https://www.tecmint.com/category/linux-distros/redhat/)**,**[**Tomcat**](https://www.tecmint.com/category/tomcat/)[**4 Comments**](https://www.tecmint.com/install-apache-tomcat-in-rhel-8/#comments)

**Apache Tomcat** is an open-source, lightweight, powerful and widely-used web server developed and maintained by **Apache Foundation**. It is an implementation of the **Java Servlet**, **JavaServer Pages (JSP)**, **Java Expression Language (EL)** and **Java WebSocket** technologies, and provides a pure Java HTTP server to run Java web-based applications.

This article will walk you throughout the installation and configuration of **Apache Tomcat 9** with remote access to the web interface on **RHEL 8** Linux.

If you’re looking to have Tomcat on RHEL/CentOS 7, follow this article to [Install Apache Tomcat on RHEL/CentOS 7](https://www.tecmint.com/install-apache-tomcat-in-centos/).

**Step 1: Installing Java on RHEL 8**

To install **Java** on **RHEL 8**, first, update the system packages and install the default available version of **Java 8** or **Java 11** using the following [dnf commands](https://www.tecmint.com/dnf-commands-for-fedora-rpm-package-management/" \t "_blank) as shown.

# dnf update

# dnf install java-1.8.0-openjdk-devel #install JDK 8

OR

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

Once the installation finishes, you can verify the installed Java version on the system using the following command.

# java -version

**Sample Output**

**Check Java Version in RHEL 8**

openjdk version "1.8.0\_222"

OpenJDK Runtime Environment (build 1.8.0\_222-b10)

OpenJDK 64-Bit Server VM (build 25.222-b10, mixed mode)

**Step 2: Installing Apache Tomcat on RHEL 8**

Once **JAVA** has been installed on the system, now it’s time to download the latest version of **Apache Tomcat** (i.e. **9.0.24**) is the most recent stable version at the time of writing this article.

If you want to verify the version, head over to the official Apache download page and check if there is a newer version available to download.

1. <https://tomcat.apache.org/download-90.cgi>

Alternatively, you can download the latest version of **Apache Tomcat** using the following [wget command](https://www.tecmint.com/10-wget-command-examples-in-linux/" \t "_blank) and set up it as shown.

# cd /usr/local

# wget http://www-us.apache.org/dist/tomcat/tomcat-9/v9.0.24/bin/apache-tomcat-9.0.24.tar.gz

# tar -xvf apache-tomcat-9.0.24.tar.gz

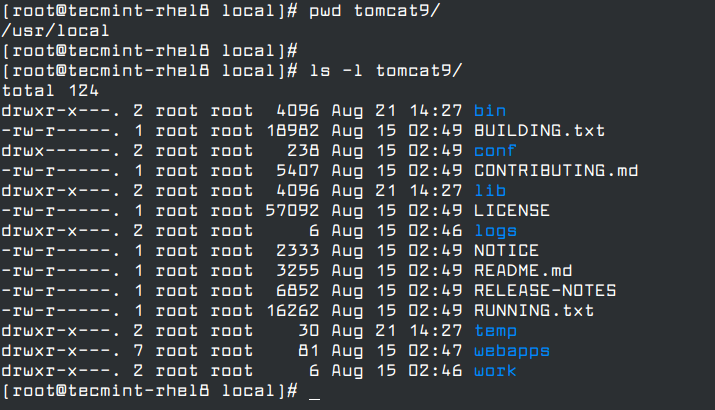
# mv apache-tomcat-9.0.24 tomcat9

**Note**: If newer **Apache Tomcat** version available, make sure to replace the version number above with the latest version.

The **Apache Tomcat** server is now deployed in the /usr/local/tomcat9 directory, you can verify the contents by running the [pwd command](https://www.tecmint.com/pwd-command-examples/" \t "_blank) and [list the directory content](https://www.tecmint.com/tag/linux-ls-command/) as well.

# pwd tomcat9/

# ls -l tomcat9/

[](https://www.tecmint.com/wp-content/uploads/2019/09/Check-Apache-Tomcat-Files.png)Check Apache Tomcat Files

The following is a description of each of the sub-directories in the installation directory of **Apache Tomcat**.

* **bin** – contains the executables.
* **conf** – contains configuration files.
* **lib** – stores library files.
* **log** – stores log files.
* **temp** – contains temporary files.
* **webaaps** – stores web application files.

**Step 3: Running Apache Tomcat Under Systemd in RHEL 8**

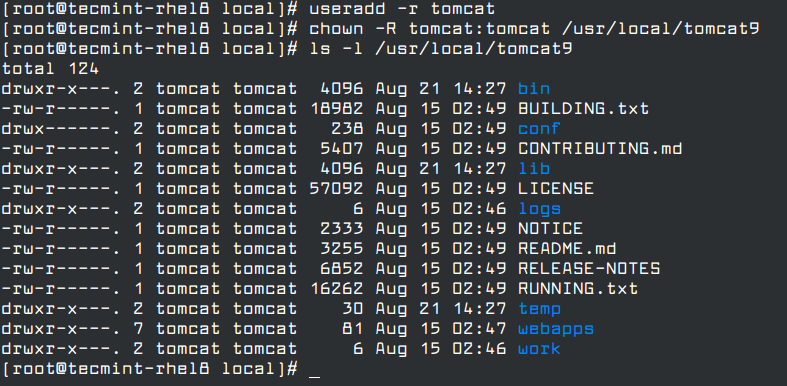
To easily manage the **Apache Tomcat** daemon, you need to run it as a service under **systemd** (system and service manager). The service will run with permissions of a system user called **tomcat** which you need to create it using [useradd command](https://www.tecmint.com/add-users-in-linux/" \t "_blank).

# useradd -r tomcat

Once the **tomcat** user is created, give it permissions and ownership rights to the Tomcat installation directory and all of its contents using the following chown command.

# chown -R tomcat:tomcat /usr/local/tomcat9

# ls -l /usr/local/tomcat9

[](https://www.tecmint.com/wp-content/uploads/2019/09/Create-Apache-Tomcat-User.png)Create Apache Tomcat User

Next, create a tomcat.service unit file under **/etc/systemd/system/** directory using your favorite text editor.

# vi /etc/systemd/system/tomcat.service

Copy and paste the following configuration in the tomcat.service file.

[Unit]

Description=Apache Tomcat Server

After=syslog.target network.target

[Service]

Type=forking

User=tomcat

Group=tomcat

Environment=CATALINA\_PID=/usr/local/tomcat9/temp/tomcat.pid

Environment=CATALINA\_HOME=/usr/local/tomcat9

Environment=CATALINA\_BASE=/usr/local/tomcat9

ExecStart=/usr/local/tomcat9/bin/catalina.sh start

ExecStop=/usr/local/tomcat9/bin/catalina.sh stop

RestartSec=10

Restart=always

[Install]

WantedBy=multi-user.target

Save the file reload the systemd configuration to apply the recent changes using the following command.

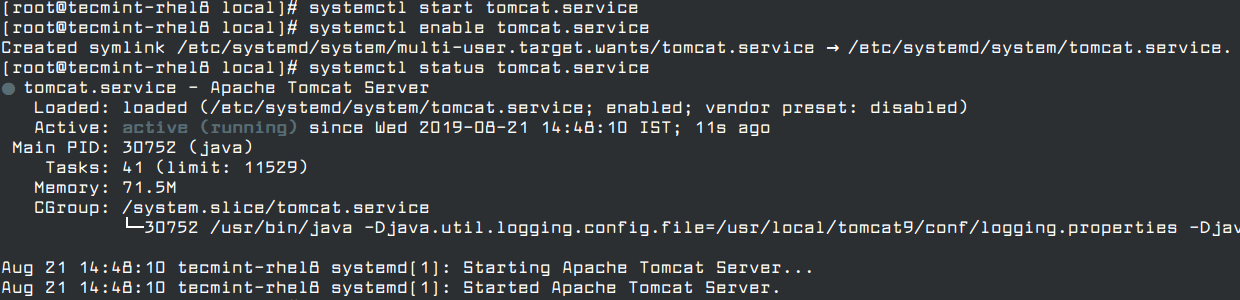
# systemctl daemon-reload

Then start the **tomcat** service, enable it to auto-start at system boot and check the status using the following commands.

# systemctl start tomcat.service

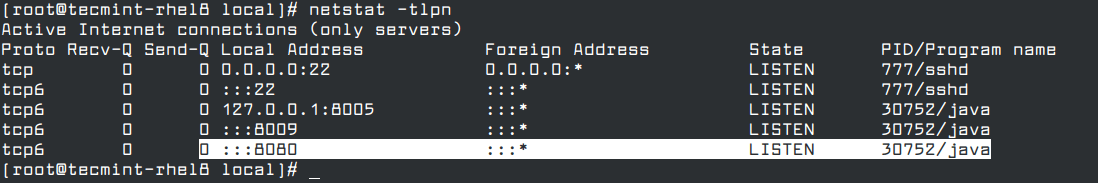
# systemctl enable tomcat.service

# systemctl status tomcat.service

[](https://www.tecmint.com/wp-content/uploads/2019/09/Start-Apache-Tomcat-Under-Systemd.png)Run Apache Tomcat Under Systemd

**Tomcat** uses port **8080** and **8443** for **HTTP** and **HTTPS** requests respectively. You can also confirm that the daemon is up and listening by checking the HTTP port among all listening ports on the system using [netstat command](https://www.tecmint.com/20-netstat-commands-for-linux-network-management/" \t "_blank).

# netstat -tlpn

[](https://www.tecmint.com/wp-content/uploads/2019/09/Check-Apache-Tomcat-Port.png)Check Apache Tomcat Port

If you have the [firewalld service running](https://www.tecmint.com/install-configure-firewalld-in-centos-ubuntu/" \t "_blank), you must open the ports **8080** and **8443** before accessing the web interface for Tomcat, using the [firewall-cmd command](https://www.tecmint.com/firewalld-rules-for-centos-7/) as shown.

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

# firewall-cmd --zone=public --permanent --add-port=8443/tcp

# firewall-cmd --reload

**Step 4: Access Apache Tomcat Web Interface**

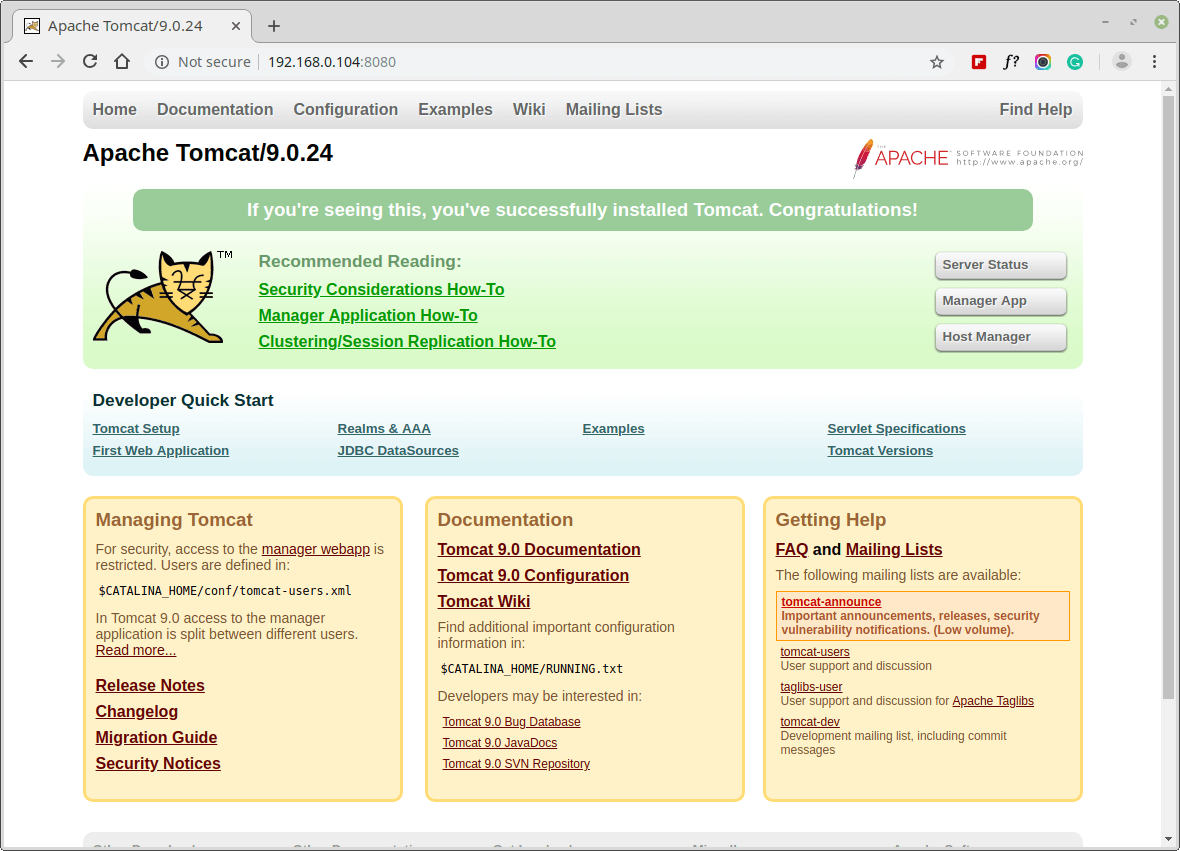
Now that you have installed, configured and started **Tomcat** as a service, and allowed requests to the daemon via the firewall, you can test the installation by trying to accessing the web interface using the URL.

http://localhost:8080

OR

http://SERVER\_IP:8080

Once you see the page shown in the screenshot, you’ve successfully installed **Tomcat**.

[](https://www.tecmint.com/wp-content/uploads/2019/09/Apache-Tomcat-Dashboard.png)Apache Tomcat Dashboard

**Tomcat** includes a web application called **Manager** used to deploy a new web application from the uploaded contents of a **WAR** file, deploy a new web application, list the currently deployed web applications, and the sessions that are currently active for those web apps, and much more.

It also provides a **Host Manager** application used to manage (create, delete, etc.) virtual hosts within **Tomcat**.

**Step 5: Enable HTTP Authentication for Tomcat Manager and Host Manager**

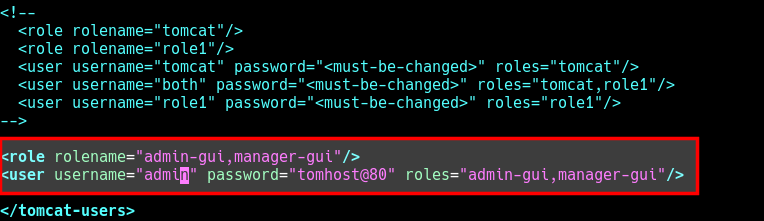
To ensure restricted access to the **Manager** and **Host Manager** apps in a production environment, you need to configure basic HTTP authentication in the **/usr/local/tomcat9/conf/tomcat-users.xml** configuration file.

# vi /usr/local/tomcat9/conf/tomcat-users.xml

Copy and paste the following configuration within the <tomcat-users> and </tomcat-users> tags as shown in the screenshot. This configuration adds the **admin-gui** and **manager-gui** roles to a user named **“admin”** with a password of **“tomhost@80”**.

<role rolename="admin-gui,manager-gui"/>

<user username="admin" password="tomhost@80" roles="admin-gui,manager-gui"/>

[](https://www.tecmint.com/wp-content/uploads/2019/09/Configure-Tomcat-HTTP-Authentication.png)Configure Tomcat HTTP Authentication

Save the changes in the file and exit.

**Step 6: Enable Remote Access to Tomcat Manager and Host Manager**

By default, access to the **Manager** and **Host Manager** apps is restricted to the **localhost**, the server on which **Tomcat** is installed and running. But you can enable remote access to a specific IP address or network e.g your LAN.

To enable remote access to the **Manager** app, open and edit the configuration file **/opt/apache-tomcat-9.0.24/webapps/host-manager/META-INF/context.xml**.

# vi /usr/local/tomcat9/webapps/manager/META-INF/context.xml

Then look for the following line.

allow="127\.\d+\.\d+\.\d+|::1|0:0:0:0:0:0:0:1" />

change it to this to allow tomcat access from IP address **192.168.56.10**.

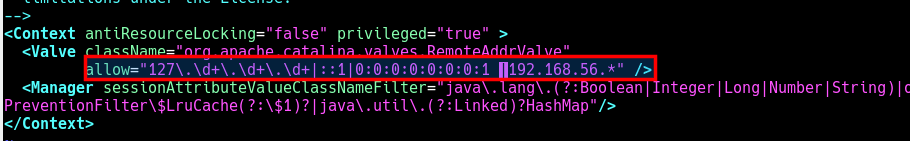
allow="127\.\d+\.\d+\.\d+|::1|0:0:0:0:0:0:0:1 |192.168.56.10" />

You can also allow tomcat access from the local network **192.168.56.0**.

allow="127\.\d+\.\d+\.\d+|::1|0:0:0:0:0:0:0:1 |192.168.56.\*" />

or allow tomcat access from any host or network.

allow="127\.\d+\.\d+\.\d+|::1|0:0:0:0:0:0:0:1 |.\*" />

[](https://www.tecmint.com/wp-content/uploads/2019/09/Enable-Tomcat-Access-from-IP.png)Enable Tomcat Access from IP

Then save the changes in the file and close it.

Similarly, enable remote access to the **Host Manager** app in the file **/usr/local/tomcat9/webapps/host-manager/META-INF/context.xml** as shown above.

Next, restart the **tomcat** service to apply the recent changes.

# systemctl restart tomcat.service

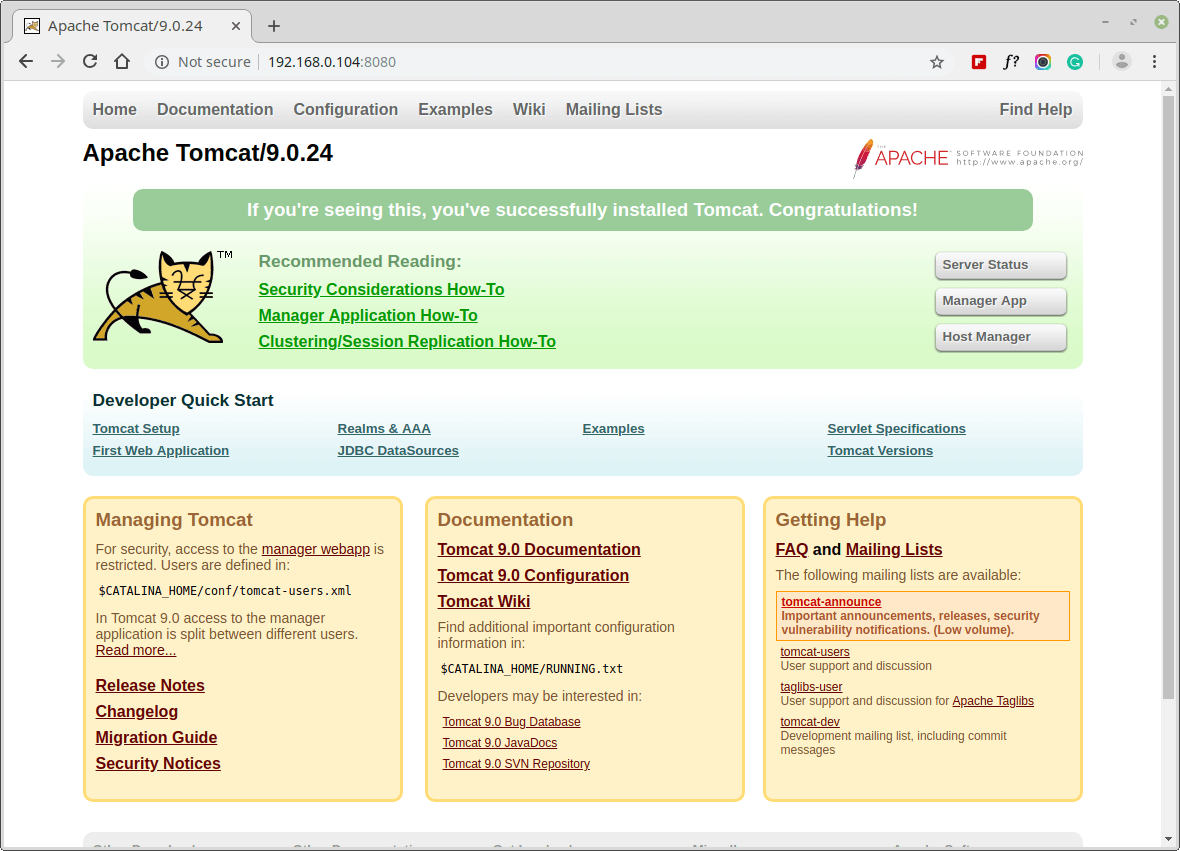
**Step 7: Access Tomcat Manager Web Apps**

To access the **Tomcat Manager** web app, you can click on the link as shown in the screenshot or use the URL.

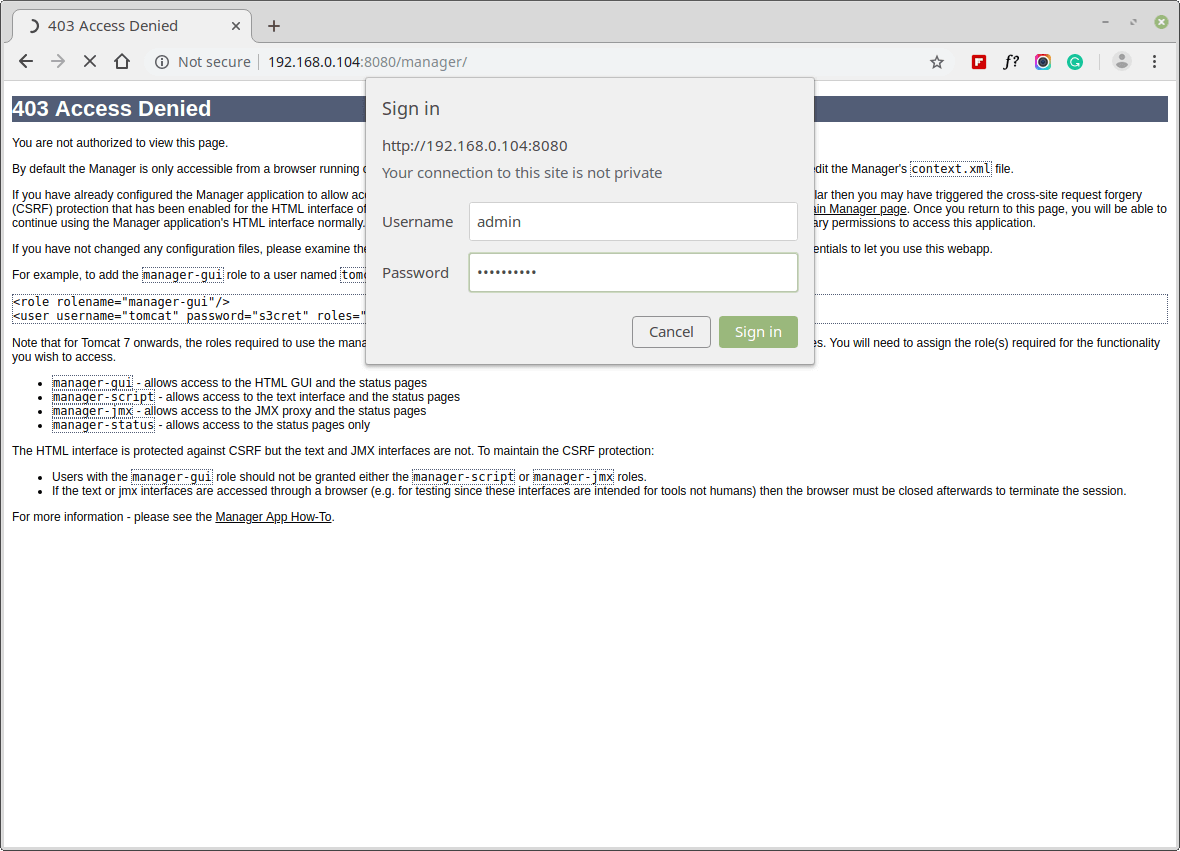
http://localhost:8080/manager

OR

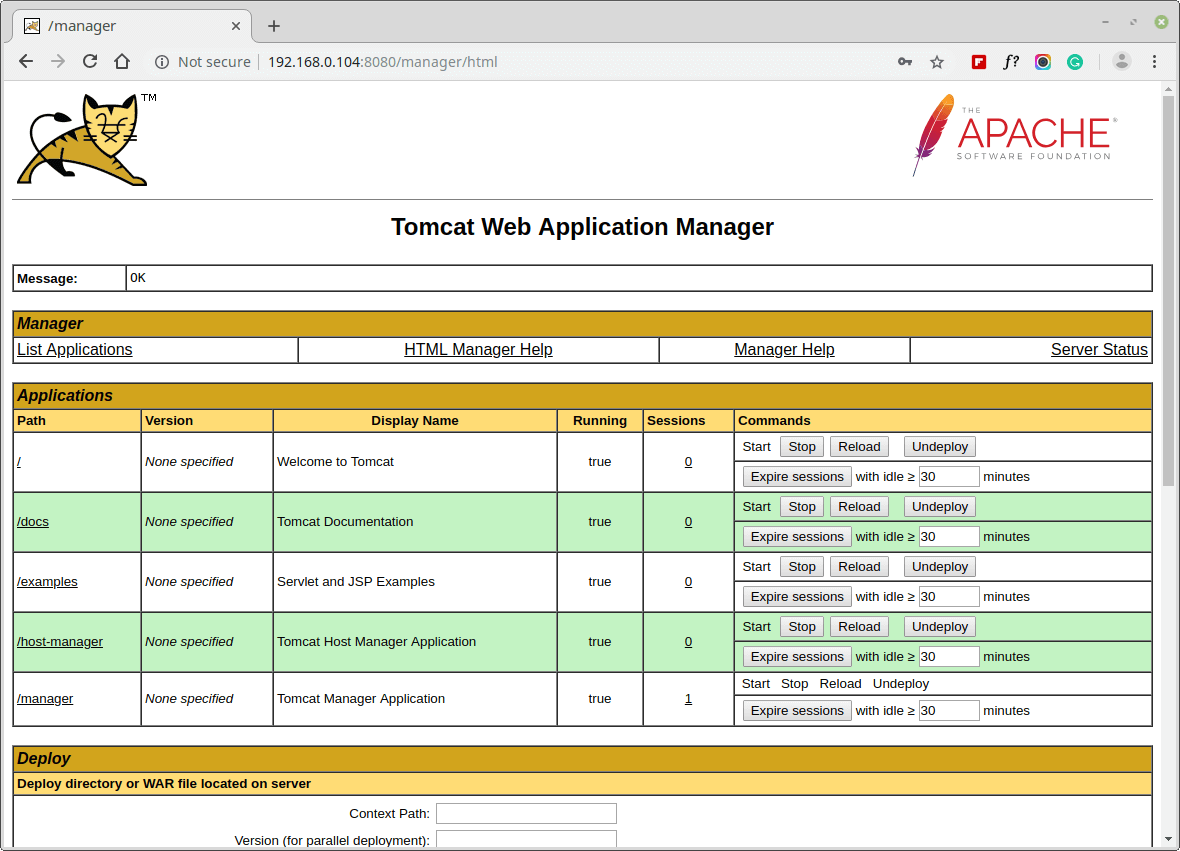
http://SERVER\_IP:8080/manager

[](https://www.tecmint.com/wp-content/uploads/2019/09/Apache-Tomcat-Dashboard.png)Apache Tomcat Dashboard

You will be asked to authenticate: enter the username and password you created earlier on to log into the manager app as shown in the screenshot.

[](https://www.tecmint.com/wp-content/uploads/2019/09/Apache-Tomcat-Admin-Login.png)Apache Tomcat Admin Login

The following screenshot shows the **Manager** app HTML interface where you can deploy a new web application from the uploaded contents of a WAR file, deploy a new web application or list existing apps and do more.

[](https://www.tecmint.com/wp-content/uploads/2019/09/Tomcat-Web-Application-Manager.png)Tomcat Web Application Manager

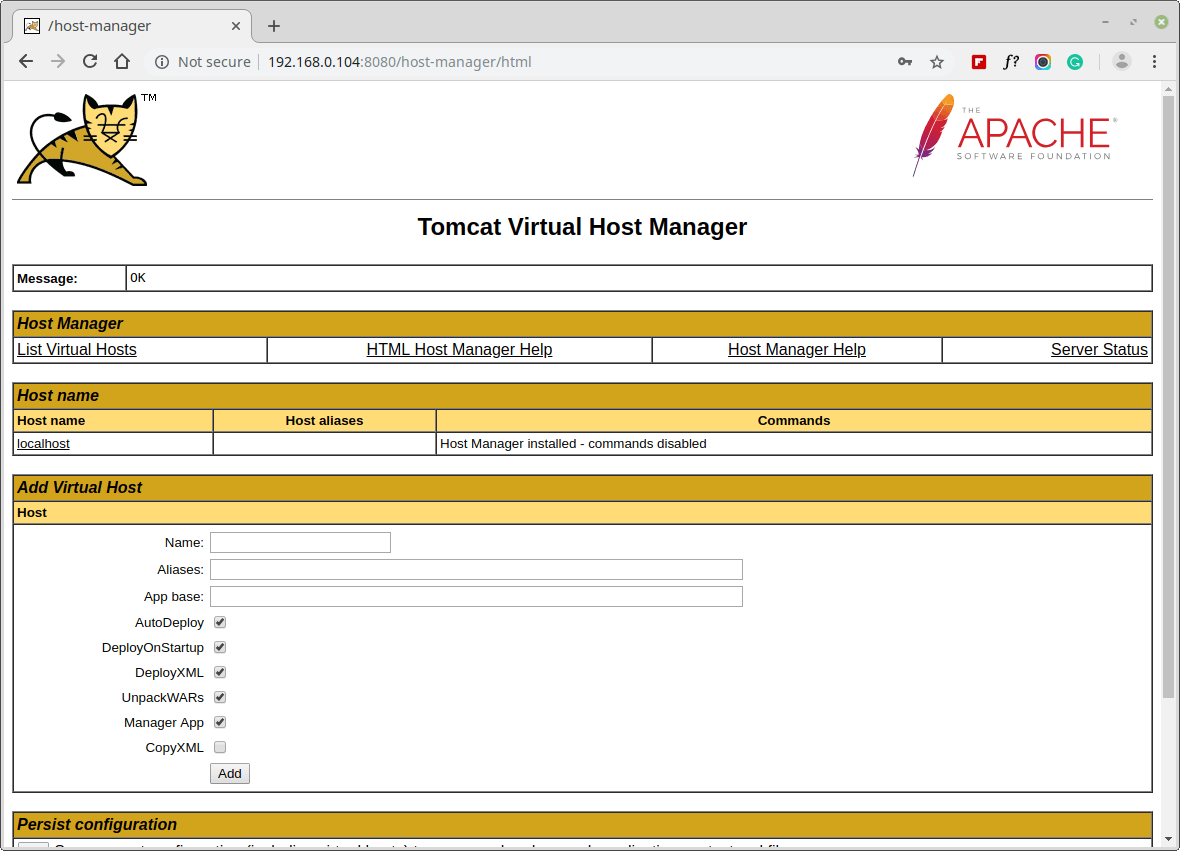
**Step 8: Access Tomcat Host Manager Web Apps**

To access the **Host Manager**, go to any of the following URL.

http://localhost:8080/host-manager

OR

http://SERVER\_IP:8080/host-manager

[](https://www.tecmint.com/wp-content/uploads/2019/09/Tomcat-Virtual-Host-Manager.png)Tomcat Virtual Host Manager

Congratulations! You have successfully installed and configured **Apache Tomcat** on your **RHEL 8** server. For more information, see the [Apache Tomcat 9.0 documentation](https://tomcat.apache.org/tomcat-9.0-doc/).

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