

November 4, 2015  
Revision 2.0

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# Installation Guide: NIST HL7v2 Validation Tools

Submitted by:

National Institute of Standards and Technology (NIST)

November 4, 2015

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## Introduction

This Installation Guide provides step-by-step instructions to install the war files of the following NIST HL7v2 Validation Tools. The war files may be downloaded from the Documentation Page of the tools online:

- Electronic Laboratory Reporting (ELR) 2014 and 2015 Edition - <http://hl7v2-elr-testing.nist.gov>
- Syndromic Surveillance 2014 Edition - <http://hl7v2-ss-testing.nist.gov>
- Immunization Messaging 2014 Edition- <http://hl7v2-iz-testing.nist.gov>
- Lab Results Interface (LRI) 2014 Edition - <http://hl7v2-lab-testing.nist.gov>
- Immunization Messaging 2015 Edition – <http://hl7v2-iz-r1.5-testing.nist.gov>
- Syndromic Surveillance 2015 - <<http://hl7v2-ss-testing.nist.gov>>

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## War File Installation Quick Guide

1. Download and Install Java version 5 or later.
2. Download and Install Tomcat 7.
3. Open the Tomcat bin folder. (For example - C:\Program Files\Apache Software Foundation\Tomcat 7.0\bin)
4. Right click on the Tomcat7w file and select "Run as administrator". (Note: If you don't have administrator privileges, contact your administrator.)
5. In the Tomcat 7 Properties window, select Startup Type "Automatic". Apply the settings.
6. Start the Tomcat service if it is not already started.
7. Check the status of the Tomcat service by opening up a browser window and navigating to: <http://localhost:8080/>. The Tomcat page should load successfully.
8. Copy and paste the Validation Tool war file into the Tomcat webapps folder. (For example - C:\Program Files\Apache Software Foundation\Tomcat 7.0\webapps)
9. Copy the name of war file and paste it after the URL address in the browser window: "http://localhost:8080/". (For example, for the Immunization war file "mu-immunization-1.0.14-SNAPSHOT.war", the URL becomes "http://localhost:8080/mu-immunization-1.0.14-SNAPSHOT".)
10. Press Enter or refresh the browser page. The Validation Tool is now loaded and available for use locally on your computer.

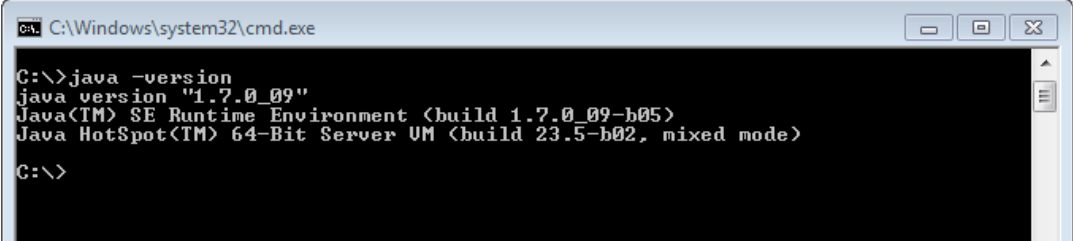
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## War File Installation Detailed Guide – Windows 7

In order to run the Validation Tool war file, Java (version 5 or later) and Tomcat 7 must be installed. Tomcat must also be running. If both Java and Tomcat (with the correct versions) have been installed, skip to [Section III. Run Tomcat](#). Otherwise, begin by following the steps below to install Java and Tomcat.

### I. Download and Install Java

1. First, check if Java is already installed:
  - a. Click on the Start/Windows Icon and type “cmd” in the search box to open up the Command prompt.
  - b. Type “java -version” in the command prompt.
    - i. If the Java version is listed and version is 5 or later (as shown below), skip to [Section II. Download and Install Tomcat 7](#).



```
C:\Windows\system32\cmd.exe

C:\>java -version
java version "1.7.0_09"
Java(TM) SE Runtime Environment (build 1.7.0_09-b05)
Java HotSpot(TM) 64-Bit Server VM (build 23.5-b02, mixed mode)

C:\>
```

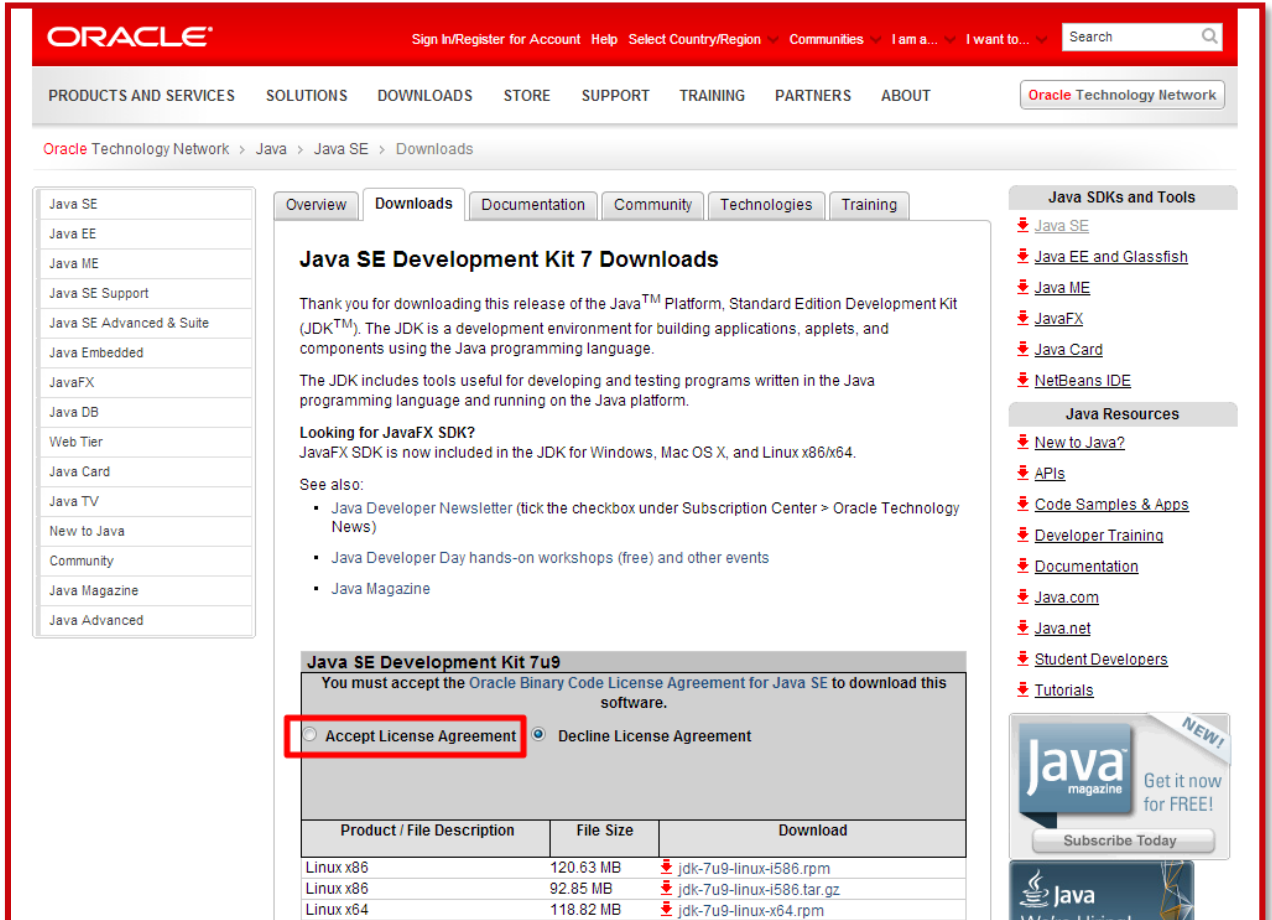
- ii. If you receive an “Unknown Command” error message or if the Java version listed is 5 or earlier, continue with the remaining steps to download and install Java.
2. Navigate to <http://www.oracle.com/technetwork/java/javase/downloads/index.html>
3. Click on the Download button for Java Platform (JDK).

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The screenshot displays the Oracle Java SE Downloads page. The Oracle logo is at the top left. Navigation links include 'PRODUCTS AND SERVICES', 'SOLUTIONS', 'DOWNLOADS', 'STORE', 'SUPPORT', 'TRAINING', 'PARTNERS', and 'ABOUT'. A search bar is on the top right. The breadcrumb trail reads 'Oracle Technology Network > Java > Java SE > Downloads'. The left sidebar lists various Java products. The main content area is titled 'Java SE Downloads' and features tabs for 'Overview', 'Downloads', 'Documentation', 'Community', 'Technologies', and 'Training'. Below these tabs are four download cards: 'Java Platform (JDK) 7u9', 'JavaFX 2.2.3', 'JDK 7u9 + NetBeans', and 'JDK 7 + Java EE'. Each card has a 'DOWNLOAD' button with a small icon. The 'DOWNLOAD' button for the 'Java Platform (JDK) 7u9' card is highlighted with a red rectangular box. On the right side, there are sections for 'Java SDKs and Tools' and 'Java Resources' with links to various Java-related resources.

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4. Check the button next to the Accept License Agreement option for the latest version of Java.



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### Java SE Development Kit 7 Downloads

Thank you for downloading this release of the Java™ Platform, Standard Edition Development Kit (JDK™). The JDK is a development environment for building applications, applets, and components using the Java programming language.

The JDK includes tools useful for developing and testing programs written in the Java programming language and running on the Java platform.

**Looking for JavaFX SDK?**  
JavaFX SDK is now included in the JDK for Windows, Mac OS X, and Linux x86/x64.

See also:

- Java Developer Newsletter (tick the checkbox under Subscription Center > Oracle Technology News)
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- Java Magazine

**Java SE Development Kit 7u9**  
You must accept the Oracle Binary Code License Agreement for Java SE to download this software.

☒ Accept License Agreement ☐ Decline License Agreement

Product / File Description	File Size	Download
Linux x86	120.63 MB	<a href="#">jdk-7u9-linux-i586.rpm</a>
Linux x86	92.85 MB	<a href="#">jdk-7u9-linux-i586.tar.gz</a>
Linux x64	118.82 MB	<a href="#">jdk-7u9-linux-x64.rpm</a>

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5. For 64-bit machines, find “Windows x64” in the Product/File Description column and click on the corresponding download link. For 32-bit machines, click on the download link for “Windows x86”.



The screenshot shows the Oracle Java SE Development Kit 7 Downloads page. The page has a red header with the Oracle logo and navigation links. The main content area is titled "Java SE Development Kit 7 Downloads" and includes a table of download links for various operating systems and architectures. The "Windows x64" download link is highlighted with a red box.

Product / File Description	File Size	Download
Linux x86	120.63 MB	<a href="#">jdk-7u9-linux-i586.rpm</a>
Linux x86	92.85 MB	<a href="#">jdk-7u9-linux-i586.tar.gz</a>
Linux x64	118.82 MB	<a href="#">jdk-7u9-linux-x64.rpm</a>
Linux x64	91.59 MB	<a href="#">jdk-7u9-linux-x64.tar.gz</a>
Mac OS X	143.47 MB	<a href="#">jdk-7u9-macosx-x64.dmg</a>
Solaris x86	135.14 MB	<a href="#">jdk-7u9-solaris-i586.tar.Z</a>
Solaris x86	91.51 MB	<a href="#">jdk-7u9-solaris-i586.tar.gz</a>
Solaris SPARC	135.7 MB	<a href="#">jdk-7u9-solaris-sparc.tar.Z</a>
Solaris SPARC	95.15 MB	<a href="#">jdk-7u9-solaris-sparc.tar.gz</a>
Solaris SPARC 64-bit	22.8 MB	<a href="#">jdk-7u9-solaris-sparcv9.tar.Z</a>
Solaris SPARC 64-bit	17.51 MB	<a href="#">jdk-7u9-solaris-sparcv9.tar.gz</a>
Solaris x64	22.48 MB	<a href="#">jdk-7u9-solaris-x64.tar.Z</a>
Solaris x64	14.94 MB	<a href="#">jdk-7u9-solaris-x64.tar.gz</a>
Windows x86	88.35 MB	<a href="#">jdk-7u9-windows-i586.exe</a>
Windows x64	90.03 MB	<a href="#">jdk-7u9-windows-x64.exe</a>

6. Save the installation file.
7. Open the folder containing the installation file and double click on the executable file to begin the installation.

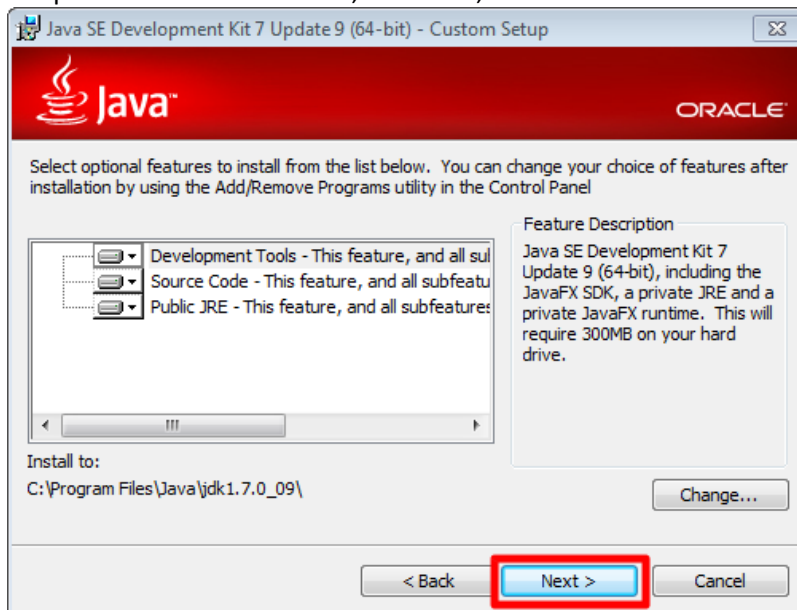


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8. The Java Installation Wizard window opens. Click on the Next button.

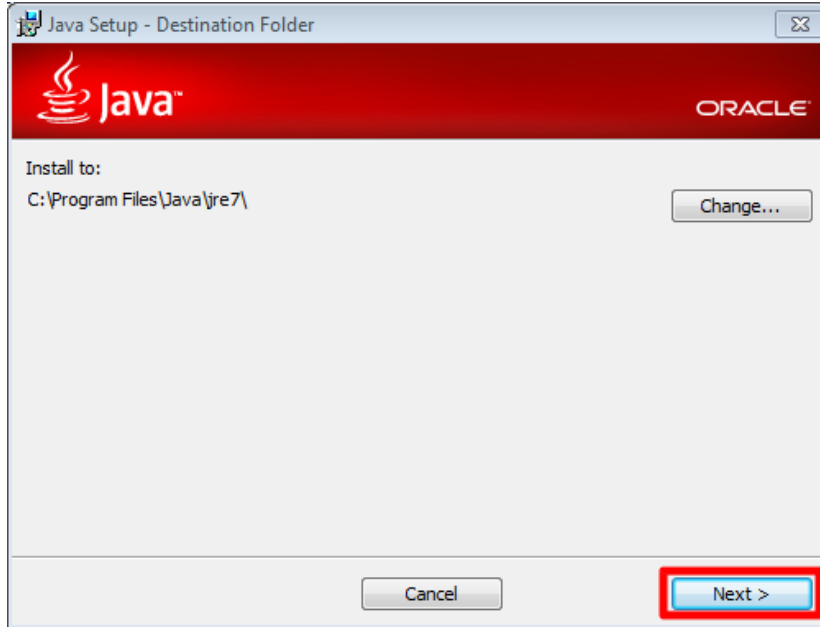


9. Select optional features to install, if desired, or leave unselected. Click on the Next button.



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10. Select the folder to save the installation files by clicking on the Change button or use the default folder displayed. Click on the Next button.



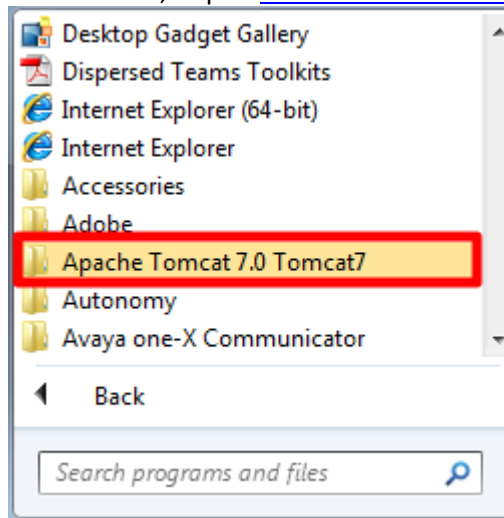
11. Click on the Close button to close the Installation Wizard window. Java is now installed. If prompted, reboot the computer.



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## II. Download and Install Tomcat 7

1. First, check if Tomcat is already installed:
  - a. Click on the Start/Windows Icon and select All Programs.
    - i. If Apache Tomcat is listed, skip to [Section III. Run Tomcat.](#)



- ii. If Apache Tomcat is not listed, continue with the remaining steps to download and install Tomcat.
2. Navigate to <http://tomcat.apache.org/download-70.cgi>
3. Change the mirror, if desired, by clicking on the drop down button. (For instance, <http://www.bizdirusa.com/mirrors/apache/>) Otherwise, leave the mirror as selected.

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**Apache Tomcat**

**The Apache Software Foundation**  
http://www.apache.org/

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Welcome to the Tomcat 7.x download page. This page provides download links for obtaining the latest version of Tomcat 7.0.x, as well as links to the archives of older releases.

**Quick Navigation**

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**Release Integrity**

You **must** verify the integrity of the downloaded files. We provide OpenPGP signatures for every release file. This signature should be matched against the [KEYS](#) file which contains the OpenPGP keys of Tomcat's Release Managers. We also provide an [MD5](#) checksum for every release file. After you download the file, you should calculate a checksum for your download, and make sure it is the same as ours.

**Mirrors**

You are currently using <http://www.bizdirusa.com/mirrors/apache/>. If you encounter a problem with this mirror, please select another mirror. If all mirrors are failing, there are *backup* mirrors (at the end of the mirrors list) that should be available.

Other mirrors:

**7.0.33**

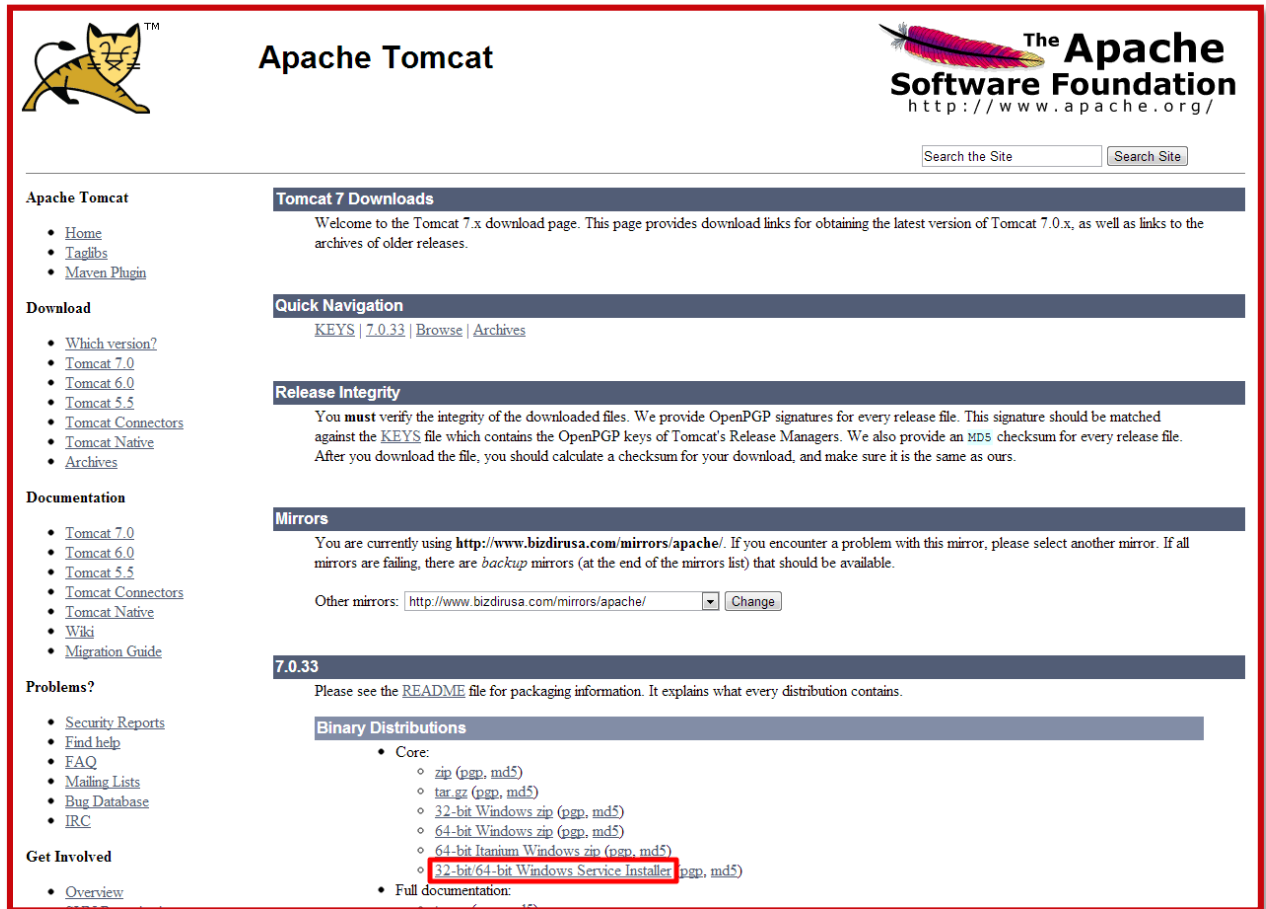
Please see the [README](#) file for packaging information. It explains what every distribution contains.

**Binary Distributions**

- Core:
  - [zip](#) (pgp, md5)
  - [tar.gz](#) (pgp, md5)
  - [32-bit Windows zip](#) (pgp, md5)

4. Scroll down to the Binary Distributions heading. Under the Core section, click on the “32-bit/64-bit Windows Service Installer” link.

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**Apache Tomcat**

**The Apache Software Foundation**  
http://www.apache.org/

Search the Site

**Apache Tomcat**

- [Home](#)
- [Taglibs](#)
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**Download**

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- [Tomcat Connectors](#)
- [Tomcat Native](#)
- [Wiki](#)
- [Migration Guide](#)

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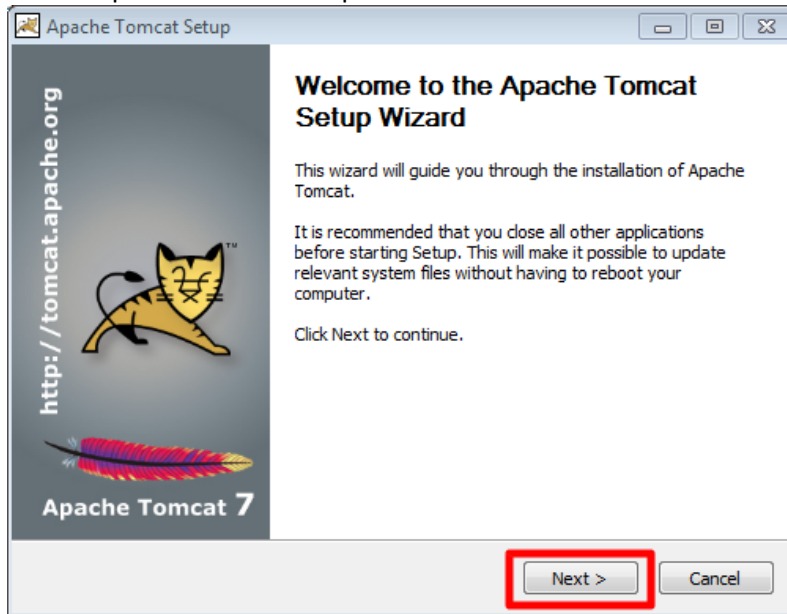
**Binary Distributions**

- Core:
  - [zip](#) (pgp, md5)
  - [tar.gz](#) (pgp, md5)
  - [32-bit Windows zip](#) (pgp, md5)
  - [64-bit Windows zip](#) (pgp, md5)
  - [64-bit Itanium Windows zip](#) (pgp, md5)
  - [32-bit/64-bit Windows Service Installer](#) (pgp, md5)
- Full documentation:
  - [6.0.39](#) (pgp, md5)
  - [6.0.38](#) (pgp, md5)
  - [6.0.37](#) (pgp, md5)
  - [6.0.36](#) (pgp, md5)
  - [6.0.35](#) (pgp, md5)
  - [6.0.34](#) (pgp, md5)
  - [6.0.33](#) (pgp, md5)
  - [6.0.32](#) (pgp, md5)
  - [6.0.31](#) (pgp, md5)
  - [6.0.30](#) (pgp, md5)
  - [6.0.29](#) (pgp, md5)
  - [6.0.28](#) (pgp, md5)
  - [6.0.27](#) (pgp, md5)
  - [6.0.26](#) (pgp, md5)
  - [6.0.25](#) (pgp, md5)
  - [6.0.24](#) (pgp, md5)
  - [6.0.23](#) (pgp, md5)
  - [6.0.22](#) (pgp, md5)
  - [6.0.21](#) (pgp, md5)
  - [6.0.20](#) (pgp, md5)
  - [6.0.19](#) (pgp, md5)
  - [6.0.18](#) (pgp, md5)
  - [6.0.17](#) (pgp, md5)
  - [6.0.16](#) (pgp, md5)
  - [6.0.15](#) (pgp, md5)
  - [6.0.14](#) (pgp, md5)
  - [6.0.13](#) (pgp, md5)
  - [6.0.12](#) (pgp, md5)
  - [6.0.11](#) (pgp, md5)
  - [6.0.10](#) (pgp, md5)
  - [6.0.9](#) (pgp, md5)
  - [6.0.8](#) (pgp, md5)
  - [6.0.7](#) (pgp, md5)
  - [6.0.6](#) (pgp, md5)
  - [6.0.5](#) (pgp, md5)
  - [6.0.4](#) (pgp, md5)
  - [6.0.3](#) (pgp, md5)
  - [6.0.2](#) (pgp, md5)
  - [6.0.1](#) (pgp, md5)

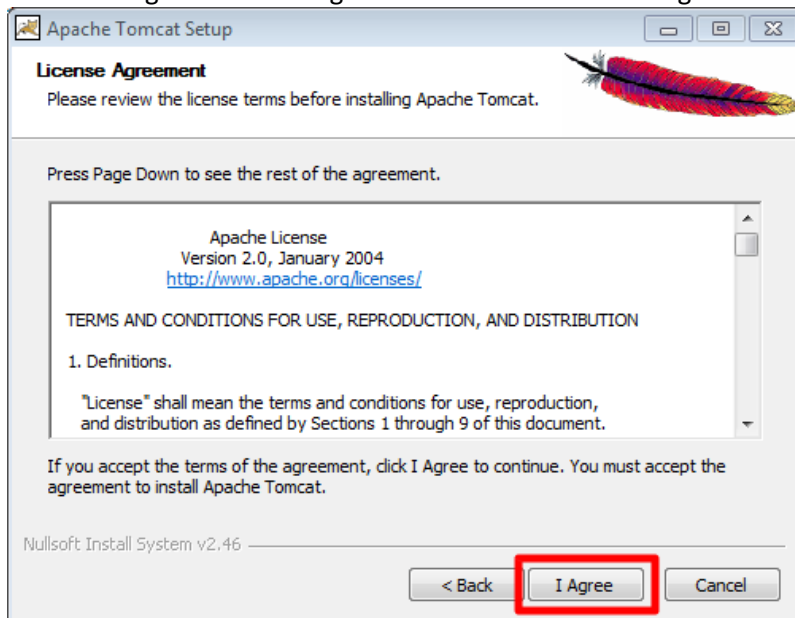
5. Save the installation file.
6. Open the folder containing the installation file and double click on the executable file to begin the installation.

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7. The Setup Wizard window opens. Click Next.

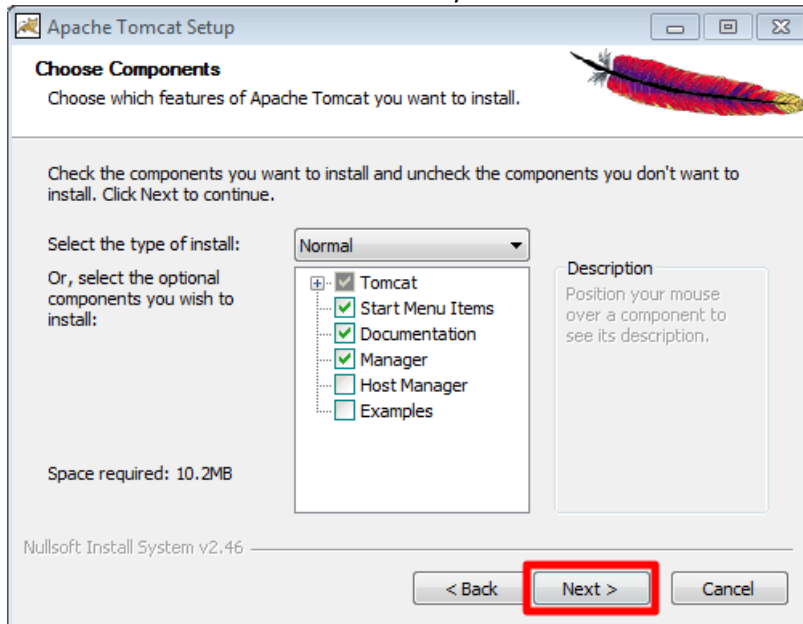


8. Scroll through the license agreement and click on the I Agree button.

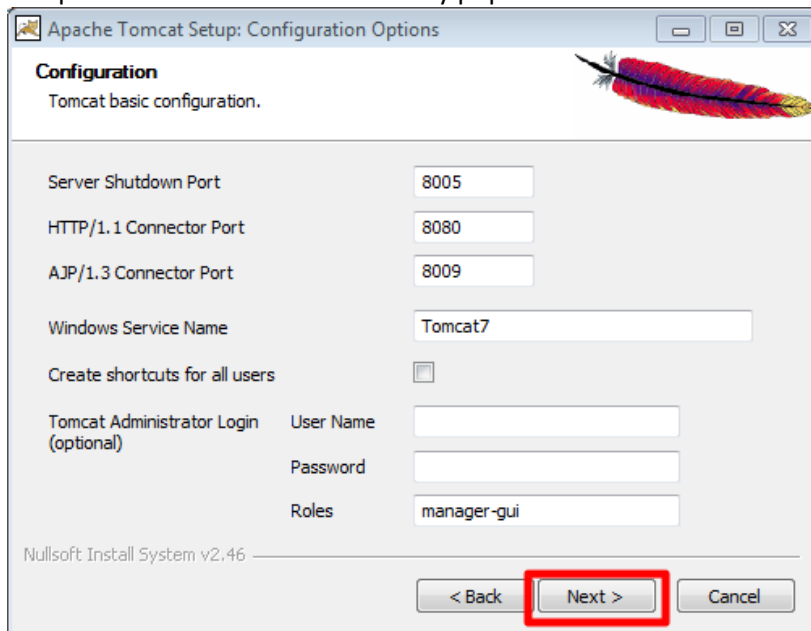


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9. Check the boxes next to the features you'd like to install. Click on the Next button.

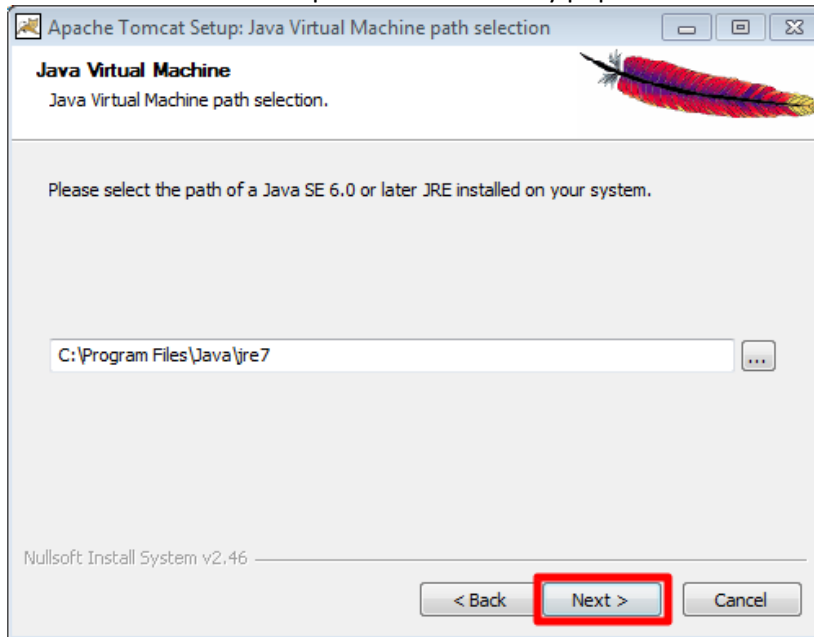


10. The port information is automatically populated. Click on the Next button.

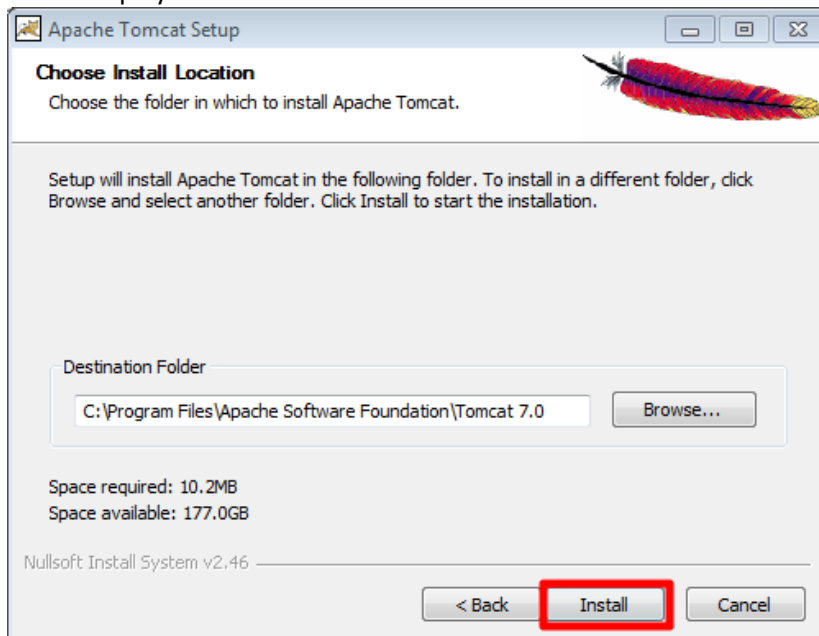


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11. The Java Virtual Machine path is automatically populated. Click on the Next button.



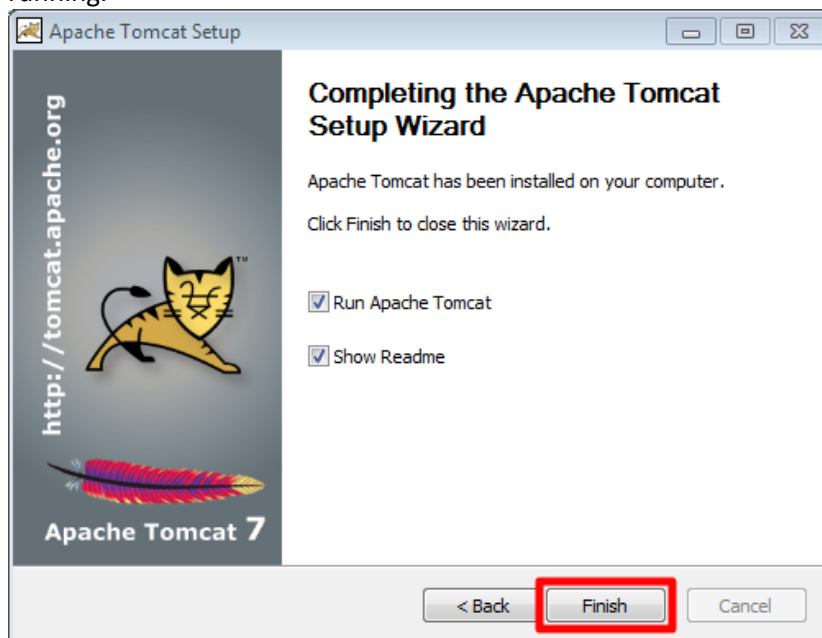
12. Select the folder to save the installation files by clicking on the Browse button or use the default folder displayed. Click on the Install button.





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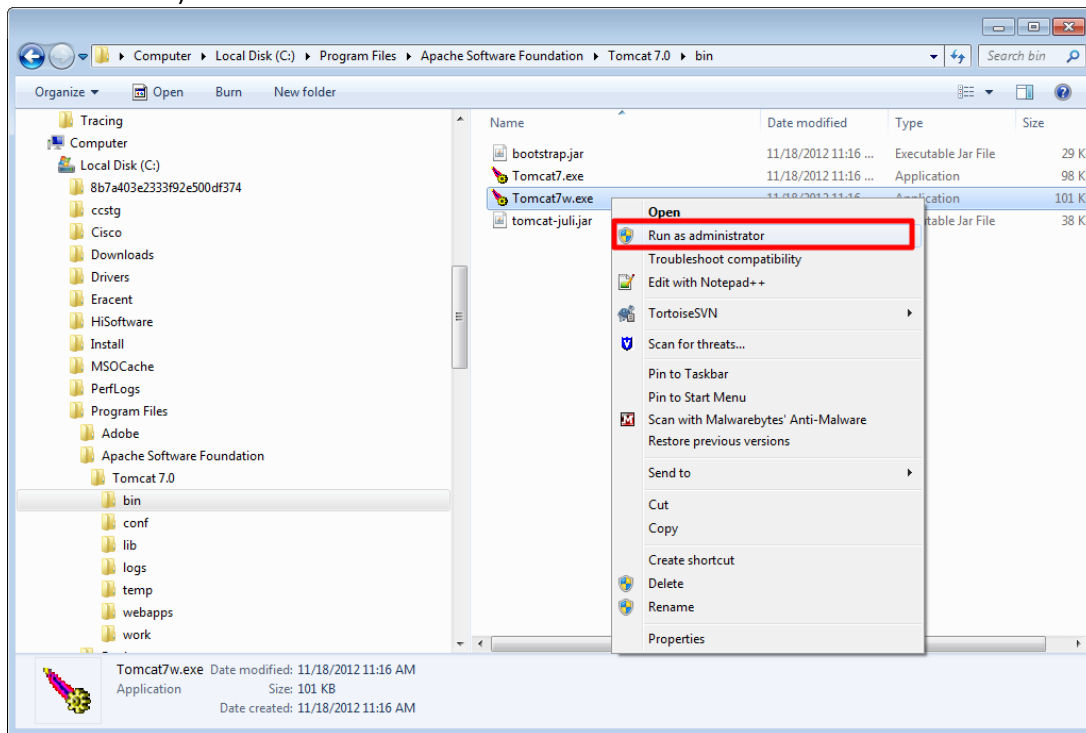
13. Click on the Finish button to close the Setup Wizard. Tomcat is now installed and will begin running.



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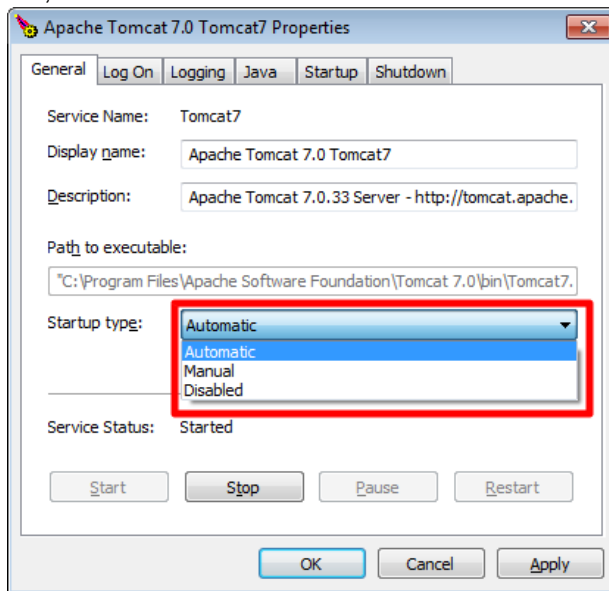
### III. Run Tomcat

1. Using Windows Explorer, open the folder - C:\Program Files\Apache Software Foundation\Tomcat 7.0\bin (or whichever folder Tomcat was installed in).
2. Right click on the Tomcat7w file.
3. Select "Run as administrator". (Note: If you don't have administrator privileges, contact your administrator.)

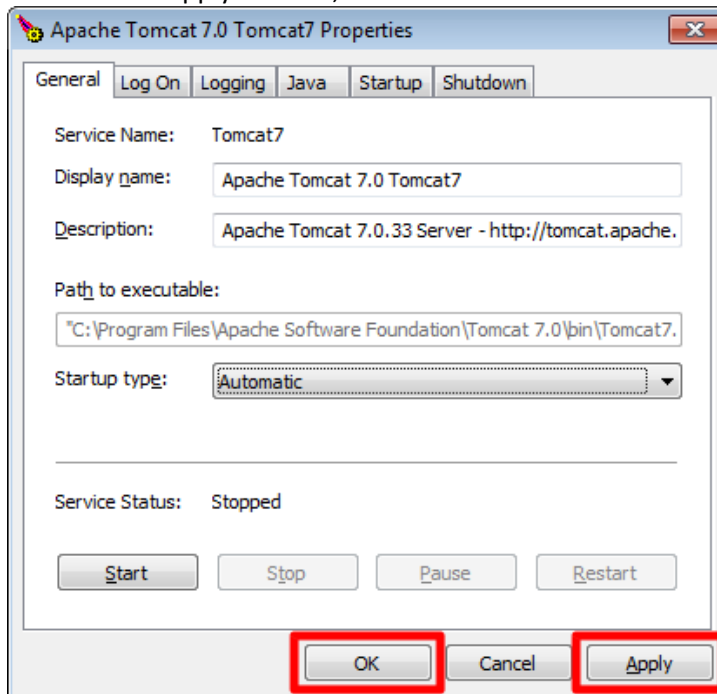


4. In the Tomcat 7 Properties window, select Startup Type "Automatic". (Note: This setting will automatically start the Tomcat service at windows startup. You may choose to leave Startup Type to "Manual", but you will have to start and stop Tomcat manually.)

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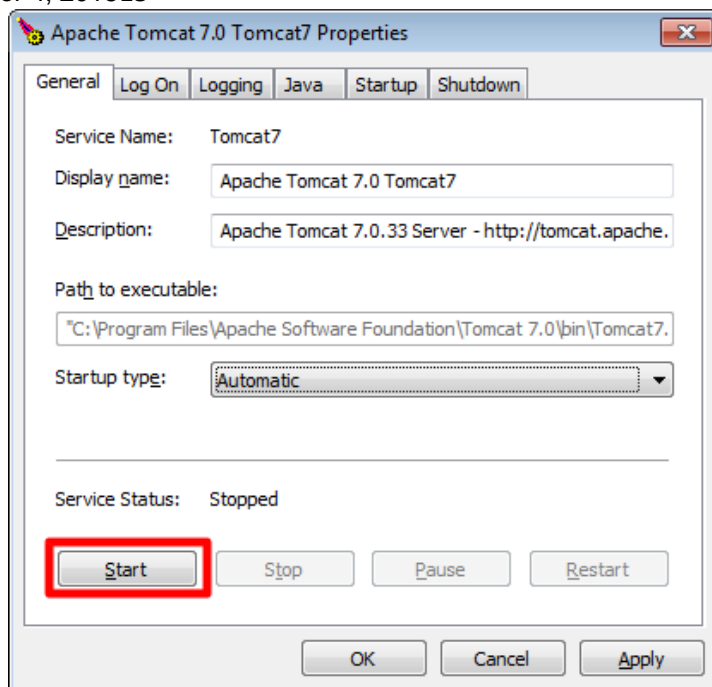


5. Click on the "Apply" button, then the "OK" button.



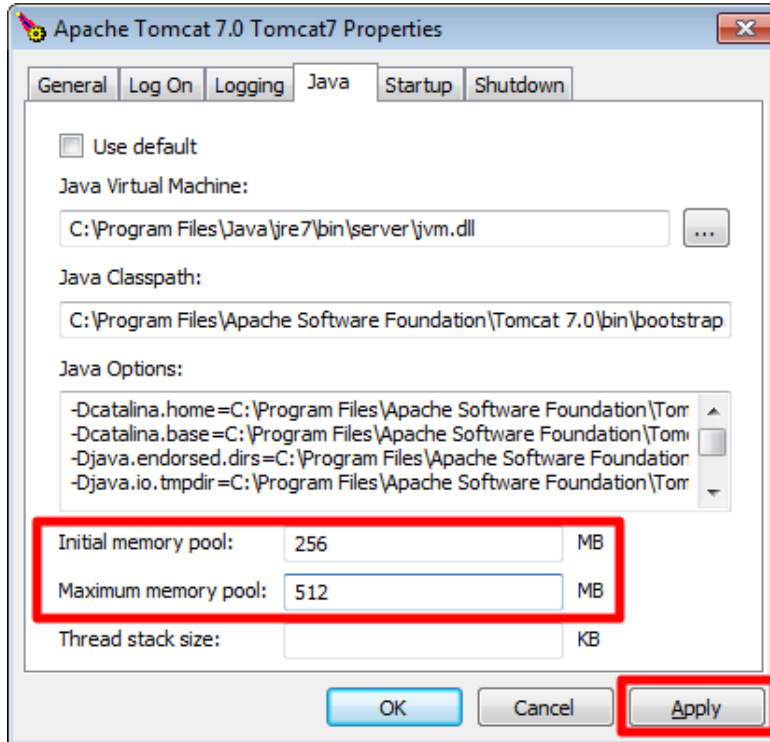
6. Start the service if it is not already started by clicking on the "Start" button.

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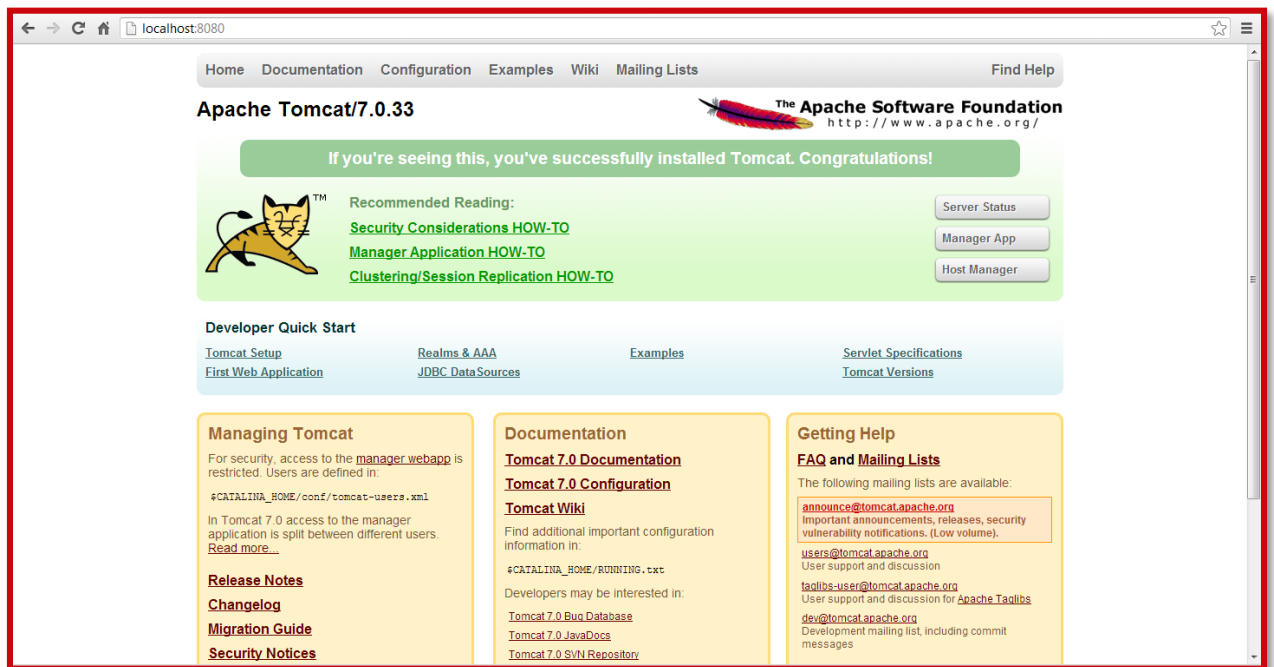
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7. If you need to run several validation tools, it is strongly recommended that you allocate more memory to Tomcat. This can be done by navigating to the Java tab, and entering the suggested values of 256 in Initial memory pool and 512 in Maximum memory pool. Click on the Apply button to save the values.



8. Check the status of the service by opening up a browser window and navigating to: <http://localhost:8080/>. The Tomcat page should load successfully.

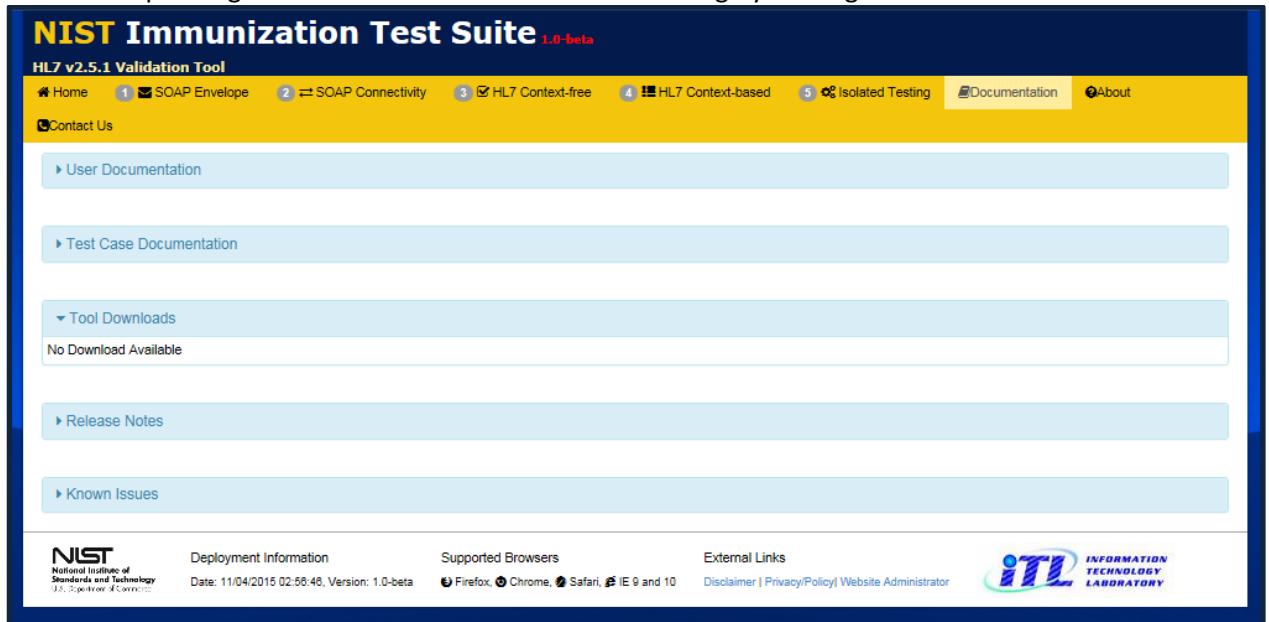
November 4, 2015 15



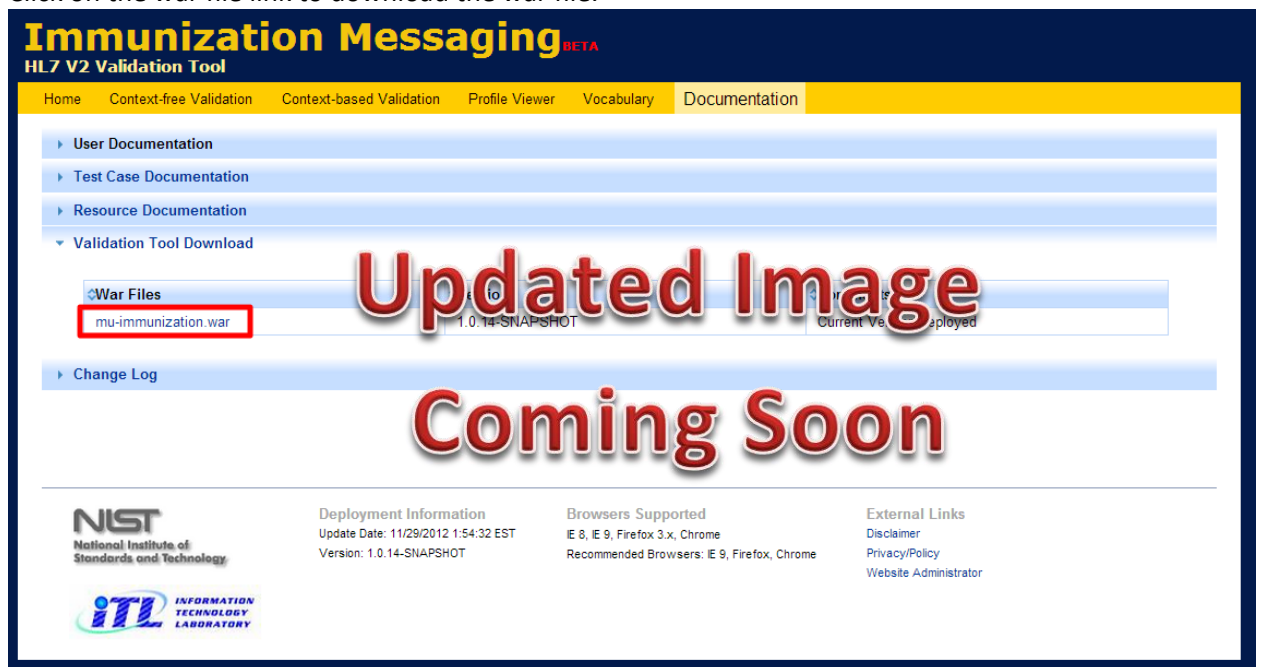
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#### IV. Copy war file into Tomcat Webapps folder

1. Download the Validation Tool war file by clicking on the Documentation tab of the Validation Tool and expanding the “Validation Tool Download” heading by clicking on it.



2. Click on the war file link to download the war file.



3. Open the folder containing the downloaded war file and copy the file onto the clipboard.

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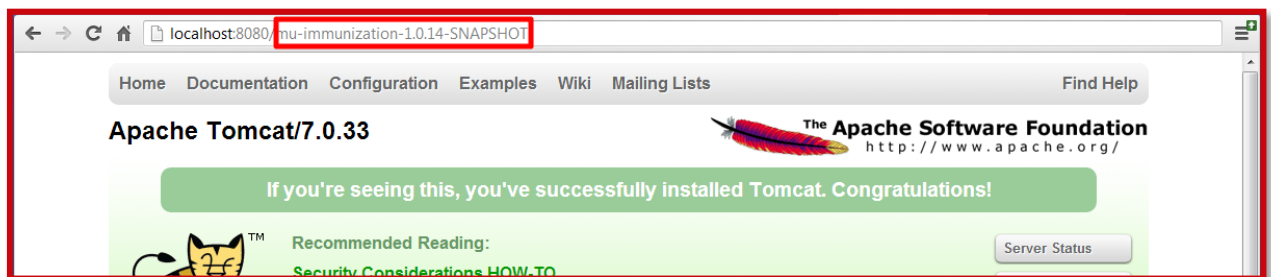
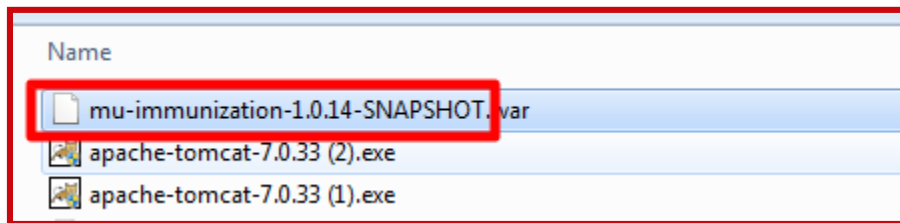
4. Open the webapps directory folder: C:\Program Files\Apache Software Foundation\Tomcat 7.0\webapps.
5. Paste the war file into the webapps folder.



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6. Copy the name of war file and paste it after the URL address in the browser window:  
“http://localhost:8080/”.

For example, for the Immunization war file “mu-immunization-1.0.14-SNAPSHOT.war”, the URL becomes “http://localhost:8080/mu-immunization-1.0.14-SNAPSHOT”.



7. Press Enter or refresh the browser page. The Validation Tool is now loaded and available for use locally on your computer.

