

Setting up a Local Development Environment: IBIS-PH

Updated September 19, 2018

Setting up a development environment on your local machine. You could work directly on your IBIS-PH server, but it's safer to have a local development environment where you develop and test your work before putting it on the server, especially after your IBIS site goes public. So you'll need to have a local (your C:\drive) development environment set up. You will work in this environment, and make your changes/modifications here first, before deploying them to your server. Each state will probably have its own publishing policies (e.g., access rights to the server, test deployment on a test server prior to public deployment, etc.).

There are multiple ways to install these applications. This documentation will just describe one that works at this point in time. You may want to check with your I.T. staff if you think you may need help, or may not have permission to install software on your computer.

Part One: Install Java Development Kit on your local development machine

The IBIS application and website won't work unless you have Java installed.

Java is a programming language and computing platform first released by Sun Microsystems in 1995. The language derives much of its syntax from C and C++ but has a simpler object model and fewer low-level facilities. Java is a general-purpose, concurrent, class-based, object-oriented language that is specifically designed to have as few implementation dependencies as possible. It is intended to let application developers "write once, run anywhere". Java is currently one of the most popular programming languages in use, and is widely used from application software to web applications.



Java JRE 8 (either 32 or 64 bit depending on your computer processor. Could be Java JRE 9 later...)

<http://www.oracle.com/technetwork/java/javase/downloads/index.html>

The screenshot displays the Oracle Technology Network (OTN) website's 'Java SE Downloads' page. At the top, there is an Oracle logo, a search bar, and navigation links for Products, Solutions, Downloads, Store, Support, Training, Partners, and About. The breadcrumb trail indicates the path: Oracle Technology Network > Java > Java SE > Downloads. A left sidebar lists various Java-related categories like Java SE, Java EE, Java ME, and Java SE Support. The main content area has tabs for Overview, Downloads, Documentation, Community, Technologies, and Training. Under the 'Downloads' tab, there are two primary download options: 'Java Platform (JDK) 8u121' and 'NetBeans with JDK 8'. Below these, a section titled 'Java Platform, Standard Edition' provides details for 'Java SE 8u121', including a note about security fixes and a highlighted 'Important planned change for MD5-signed JARs'. At the bottom of this section, there are three download buttons: 'JDK', 'Server JRE', and 'JRE', with the 'JRE' button highlighted in yellow.

Step by step:

- 1) Go to the Sun Developer Network at: <http://www.oracle.com>
- 2) Hover over “Downloads” in the top menu and choose Java for Developers under Popular Downloads on the Left hand side.
- 3) Select “Java SE” from the list of downloads available. This will take you to a new page.
- 4) Click on the “JRE” Download button. This will take you to a new page.

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Oracle Technology Network > Java > Java SE > Downloads

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Java SE Runtime Environment 8 Downloads

Do you want to run Java™ programs, or do you want to develop Java programs? If you want to run Java programs, but not develop them, download the Java Runtime Environment, or JRE™.

If you want to develop applications for Java, download the Java Development Kit, or JDK™. The JDK includes the JRE, so you do not have to download both separately.

JRE 8u121 Checksum

Java SE Runtime Environment 8u121

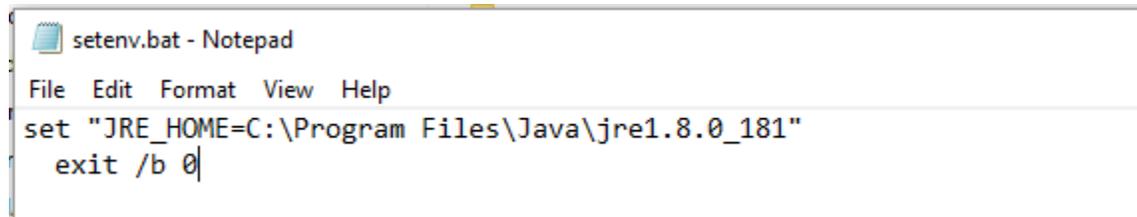
You must accept the Oracle Binary Code License Agreement for Java SE to download this software.

Accept License Agreement Decline License Agreement

Product / File Description	File Size	Download
Linux x86	56.92 MB	jre-8u121-linux-i586.rpm
Linux x86	72.76 MB	jre-8u121-linux-i586.tar.gz
Linux x64	54.39 MB	jre-8u121-linux-x64.rpm
Linux x64	70.26 MB	jre-8u121-linux-x64.tar.gz
Mac OS X	62.28 MB	jre-8u121-macosx-x64.dmg
Mac OS X	53.91 MB	jre-8u121-macosx-x64.tar.gz
Solaris SPARC 64-bit	52.05 MB	jre-8u121-solaris-sparcv9.tar.gz
Solaris x64	49.9 MB	jre-8u121-solaris-x64.tar.gz
Windows x86 Online	0.7 MB	jre-8u121-windows-i586-iftw.exe
Windows x86 Offline	53.81 MB	jre-8u121-windows-i586.exe
Windows x86	59.17 MB	jre-8u121-windows-i586.tar.gz
Windows x64 Offline	61.18 MB	jre-8u121-windows-x64.exe
Windows x64	62.66 MB	jre-8u121-windows-x64.tar.gz

- 5) Download [jre-8u121-windows-x64.exe](#)
- 6) Save File. Your computer will have a default location where it saves downloads.
- 7) Run the .exe file, and follow the steps to install Java in your C:\Program Files\Java directory, using all of the default settings.
 - a. The first popup window is ‘Open Executable File?’ Select ‘OK’
 - b. The second popup window is ‘Java(TM) SE Development Kit 8 - Setup’. Select ‘Next’
 - c. The third popup window is ‘Java(TM) SE Development Kit 8 – Custom Setup’. Select ‘Next’
 - d. The fourth popup window shows you the installation progress. It will bring up another popup window, ‘Java Setup – Destination Folder’. It will default to Install to: C:\Program Files\Java\jre8\. This should be fine, so select ‘Next’.
 - e. The next popup window is ‘Java Setup – Close Programs’. Select ‘Close Programs and Continue’. Hit ‘Ok’ if you are prompted to.
 - f. The final popup window is ‘Java(TM) SE Development Kit 8 Update XX – Complete’. Select ‘Finish’. This will take you to a new browser tab which will encourage you to register your Java Development Kit (JDK). Just close this tab.
- 8) Make the file “setenv.bat”
 - a. Copy following text and save it as “setenv.bat” under C:\apache-tomcat-9.0.10\bin

```
set "JRE_HOME=C:\Program Files\Java\jre1.8"  
exit /b 0
```



```
setenv.bat - Notepad  
File Edit Format View Help  
set "JRE_HOME=C:\Program Files\Java\jre1.8.0_181"  
exit /b 0
```

- b. Update the JRE_HOME path to the downloaded version at the time.

Part Two: Install Tomcat on your local development machine

The IBIS application and website won't work unless you have Tomcat installed.



Apache Tomcat is an open source software implementation of the Java Servlet and JavaServer Pages technologies. Tomcat is like an operating system for web applications.

- 1) Go to The Apache Foundation Website at: <http://tomcat.apache.org/index.html>
- 2) Select most current version "Tomcat 9.0" from the list of Apache projects on the left. As of March 13, 2017, the most recent version is 9.0.0.M18. (Could be Tomcat 10.0 etc. later)
- 3) Scroll down to the section "Binary Distributions". Under the "Core" bullet, select the file called 64-bit Windows zip (pgp, md5). Be noted, selecting "32-bit" or "64-bit" depends on which your computer processor allows you. To find out what processor your computer has, follow the following steps:
 - a. On your window's toolbar, click on the 'Start' button, then go to 'My Computer'.
 - b. While your cursor is on 'My Computer', right click to bring up the menu.
 - c. Choose 'Properties'
 - d. This will bring up a new window called 'System Properties'. Make sure you are on the 'General' tab, which will show you what processor your computer uses.
- 4) Save the file to your C:\ drive or some place you will be able to find it, such as a dedicated "Downloads" folder.
- 5) Unzip the files to your C:\ drive. This will create a new folder you can use for the IBIS 2.3 set up. The file created is: **apache-tomcat-x.y.zz**

Please note: “x.y.zz” is a version number from 0 to 9 or alphabetic. Please plug here by the most current version you get on the site, such as “9.0.0M18”.

9.0.0.M18

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

Binary Distributions

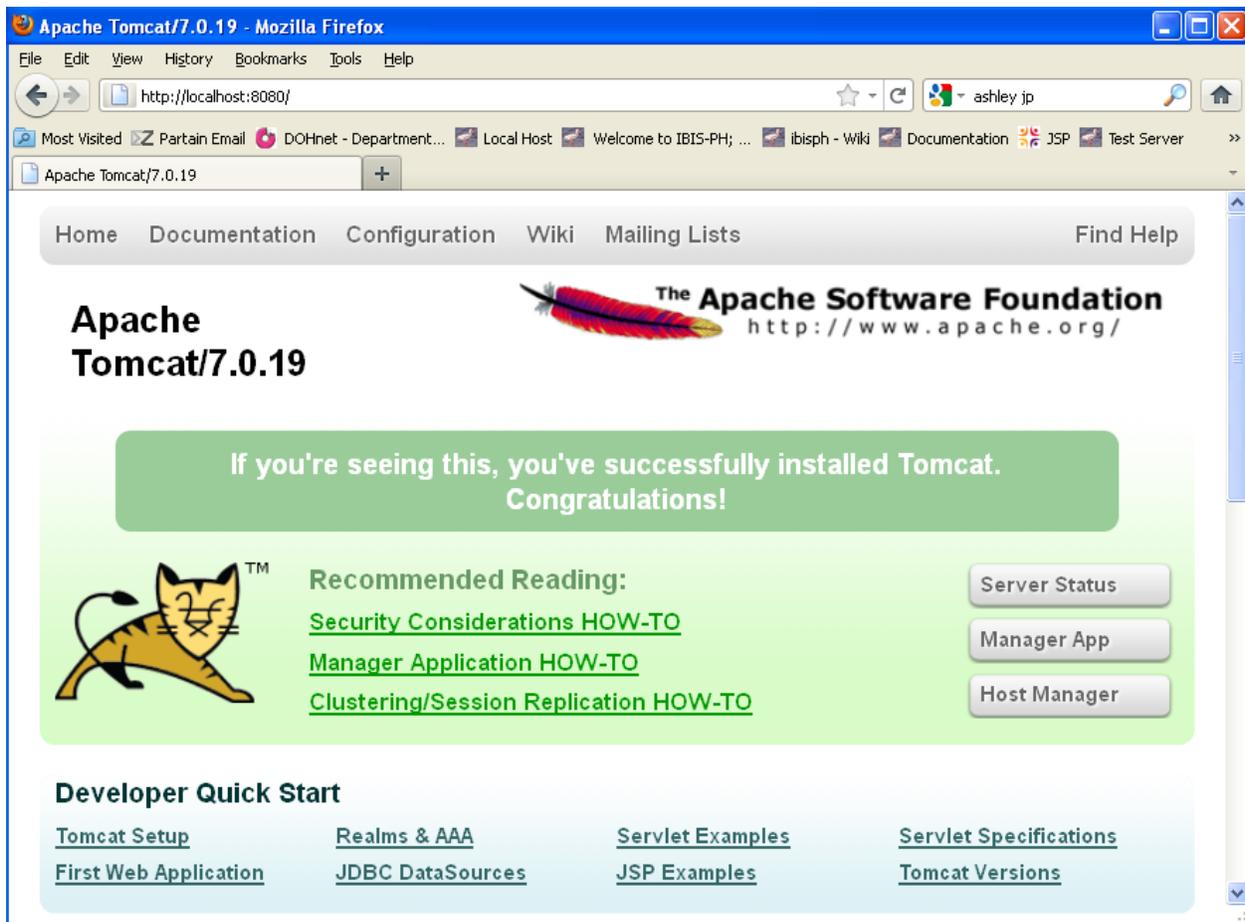
- Core:
 - [zip \(pgp, md5, sha1\)](#)
 - [tar.gz \(pgp, md5, sha1\)](#)
 - [32-bit Windows zip \(pgp, md5, sha1\)](#)
 - [64-bit Windows zip \(pgp, md5, sha1\)](#)
 - [32-bit/64-bit Windows Service Installer \(pgp, md5, sha1\)](#)
- Full documentation:
 - [tar.gz \(pgp, md5, sha1\)](#)
- Deployer:
 - [zip \(pgp, md5, sha1\)](#)
 - [tar.gz \(pgp, md5, sha1\)](#)
- Extras:
 - [JMX Remote.jar \(pgp, md5, sha1\)](#)
 - [Web services.jar \(pgp, md5, sha1\)](#)
- Embedded:
 - [tar.gz \(pgp, md5, sha1\)](#)
 - [zip \(pgp, md5, sha1\)](#)

Source Code Distributions

- [tar.gz \(pgp, md5, sha1\)](#)
- [zip \(pgp, md5, sha1\)](#)

The following pink highlighted name should be used consistently in the following set up.

- 6) Your Tomcat folder should have the following contents:
 - a. Subdirectories: bin, conf, lib, logs, temp, webapps, and work
 - b. Files: LICENSE, NOTICE, RELEASE-NOTES, RUNNING.txt
- 7) Create a shortcut on your desktop for starting up Tomcat:
 - a. Go to your desktop and right click on an empty spot to bring up the menu.
 - b. Select New → Shortcut
 - c. Use the browse function get to the location of the startup item: C:\apache-tomcat-x.y.zz\bin\startup.bat. For some reason, when we typed the path in instead of using browse to point to it, the Tomcat shortcut did not work.
 - d. Name the shortcut “Tomcat-2” or something similar
- 8) Test Tomcat to make sure it is installed properly
 - a. Double click on your new shortcut to start Tomcat
 - b. Start any browser
 - c. In the address bar, type in <http://localhost:8080>
 - d. Hit enter
 - e. You should be directed to an Apache Tomcat page with the message “If you're seeing this page via a web browser, it means you've setup Tomcat successfully. Congratulations!” (see Figure 1)



*****PLEASE NOTE*****

If the local tomcat doesn't work at this point please do following:

You will now need to download 3 dependant *.jar files and place in your **C:/local tomcat name/lib** folder:

Additional jar files are available in the repository:

a. commons-logging-1.1.3.jar

https://trac.ibisph.org/trac/browser/main/adopters/tools/additional_jars/jars_for_logging/commons-logging-1.1.3.jar

b. log4j-1.2.17.jar

https://trac.ibisph.org/trac/browser/main/adopters/tools/additional_jars/jars_for_logging/log4j-1.2.17.jar

c. javamail - mail.1.4.4.jar

https://trac.ibisph.org/trac/browser/main/adopters/tools/additional_jars/javamail/mail-1.4.4.jar

If you need help installing Tomcat, please see

<http://ibis.health.utah.gov/docs/view/install/Tomcat.html> for more detailed information.

Part Three: Install Tortoise SVN on your machine

We use TortoiseSVN as a tool to communicate between our local desktop files and our repository.



TortoiseSVN

TortoiseSVN is a software program that allows you to access the file repository from your WINDOWS EXPLORER window (the "file manager" Explorer, not Internet Explorer). If you're an IBIS software adopter, you'll want to use Tortoise because it allows you to download entire directories from the file repository, and allows you to update your version to the latest repository version.

- 1) Download the most recent version of TortoiseSVN 64bit from <http://tortoisesvn.net/downloads.html> by clicking on the blue button which says 'TortoiseSVN 64-Bit' (Based on your computer processor). The current version is 1.9.5. (If you are unsure of your processor, follow the steps in Part Two of this document, section 3), a-d.

The screenshot shows the TortoiseSVN website with a navigation menu at the top: Home, About, Downloads, Translations, Support/Docs, Other tools, and Support this project. The main content area is titled 'Downloads' and features the TortoiseSVN logo. Below the logo, there is an 'Info' section with links for About, Screenshots, Testimonials, News Archive, and News archive. A 'Support' section includes links for FAQ, Help files, Useful tips, Mailing lists, Report bugs, Translations, and Project status. A 'Misc' section has links for Issue tracker plugins and Plugins to connect with issue. The central 'Downloads' section states 'The current version is 1.9.5' and provides links for changelog and release notes. An advertisement for '3 Easy Steps' is displayed, featuring a 'START DOWNLOAD' button. Below the ad, there are two buttons for 'TortoiseSVN 1.9.5 - 32-bit' and 'TortoiseSVN 1.9.5 - 64-bit', with the 64-bit button highlighted in yellow. A note below the buttons says 'To verify the file integrity follow these instructions.' A blue information box at the bottom of the page contains a warning icon and text about the context menu in file-open/save dialogs on x64 OS.

- 2) A new dialog box will come up titled "Opening TortoiseSVN-1.9.5.27581-x64-svn-1.9.5.msi". Select "Save File"

- 3) Your computer will have a default location where it saves downloads. The easiest way to run the file you just downloaded is to click on it from the 'Downloads' window your browser will show when the file has completed downloading.
- 4) Run the *.msi file, and follow the steps to install TortoiseSVN in your C:\Program Files\Java directory.
 - a. The first popup window is 'Open Executable File?' Select 'OK'.
 - b. The second popup window is 'TortoiseSVN-1.9.5.27581-x64-svn-1.9.5.msi Setup'. Select 'Next', then follow the prompts to install the program using the default settings.
 - c. The last window which will pop up will tell you that you need to restart your system. Select "Yes" to restart your system.

Part Four: Install the IBIS-View 2.3 application on your local machine

- 1) Once TortoiseSVN has been installed, you will need to **EXPORT the core code to your local tomcat.**
 - a. Open Windows Explorer
 - b. Browse to the new Tomcat folder you just created. In this example, the folder is called 'apache-tomcat-x.y.zz'
 - c. From apache-tomcat-x.y.zz, open the folder 'webapps'
 - d. Right click in the webapps folder and choose TortoiseSVN > Export
 - e. You will be prompted to fill in a path for the 'URL of Repository'. To do this you will need to type in <https://svn.ibisph.org/svn/main> and then hit the ellipses '...' button
 - f. Once you hit the '...' button, you will be able to see the core documents
 - g. Browse to:
 - a) <https://svn.ibisph.org/svn/main/tags/releases/2.3/2.3.0/ibisph-view/src/main/webapp>
 - b) *Make sure you have clicked on the 'webapp' folder and that the complete path shows in the URL: box at the top of the window*
 - h. Hit 'Ok' to confirm the path you selected
 - i. In the Export popup, make sure that
 - a) The URL of repository is:
<https://svn.ibisph.org/svn/main/tags/releases/2.3/2.3.0/ibisph-view/src/main/webapp>
 - b) The Export directory default will say C:\apache-tomcat-x.y.zz\webapps\webapp. **You will need to change it so that it looks like this: C:\apache-tomcat-x.y.zz\webapps\ibisph-view.** If you do not make this change, your files will not load correctly.
 - j. Hit 'Ok' to download the files. You should see a popup window with purple text showing the files you are exporting. When it is done exporting, hit 'Ok' to close the popup.
- 2) You will now need to **EXPORT your state-specific files**
 - a. From C:\apache-tomcat-x.y.zz\webapps\ibisph-view right click and choose TortoiseSVN Export
 - b. You will be prompted to fill in a path for the 'URL of Repository'. To do this you will need to type in <https://svn.ibisph.org/svn/main> and then hit the ellipses '...' button
 - c. Once you hit the '...' button, you will be able to see the documents
 - d. Click on the '...' to set the URL Repository to <https://svn.ibisph.org/svn/main/adopters/ut/trunk/src/main/webapps/ibisph-view>
 - e. Hit OK
 - f. The URL of repository should be set to <https://svn.ibisph.org/svn/main/adopters/ut/trunk/src/main/webapps/ibisph-view>

- g. The Export directory default will say C:\apache-tomcat-x.y.zz\webapps\ibisph-view\ibisph-view. You will need to delete the redundant 'ibisph-view' so that the line look like this: C:\apache-tomcat-x.y.zz\webapps\ibisph-view. If you do not make this change, your files will not load correctly.
- h. Hit 'Ok' to export the files
- i. You will get a pop-up window that says "The target folder C:\apache-tomcat-x.y.zz\webapps\ is not empty! Are you sure you want to checkout/export into that folder?"
- j. Hit 'Yes' to begin the export. When it is done, hit 'Ok' to close the Export box.

3) **CHECKOUT ibisph-content** to your local drive. This file will be on the same level as your ibisph-view folder

- a. From C:\apache-tomcat-x.y.zz\webapps, right click and choose TortoiseSVN—RepoBrowser
- b. A generic URL box will come up. Click OK to continue to the next step.
- c. A new window will come up. From the left-hand nav screen navigate to <https://svn.ibisph.org/svn/main/adopters/ut/trunk/src/main/webapps/ibisph-content>
- d. Hover over the 'ibisph-content' folder and right-click to select checkout.
- e. The URL of repository will be set to:
<http://www.ibisph.org/svn/main/adopters/ut/trunk/src/main/webapps/ibisph-content>
- f. The 'Export directory' should be set to: C:\apache-tomcat-x.y.zz\webapps\ibisph-content
- g. The Checkout Depth should be fully recursive
- h. Hit 'Ok' to export the files

You should **make sure that your state files loaded properly**. To do this, follow these steps:

- a. Start your local host by double clicking on your 'apache-tomcat-x.y.zz' shortcut on your desktop. This will bring up the black Tomcat dialog window
- b. Start any browser
- c. In the address bar, type in <http://localhost:8080/ibisph-view>
- d. Hit enter
- e. You should see the IBIS-PH page. *Utah can tell that this is our site because you will see Utah feel and look web site.*

At this point your local site will be totally functional. In order to make changes to your local code and submit them to your repository, you need to continue onto the next step to checkout your state files. This will create the link between your local development environment and the file repository on the server.

4. Set up secure portal

- a. Create “user” folder under:

C:\apache-tomcat-8.0.9\webapps\ibisph-content\WEB-INF\xml

- b. Make “email_address.xml” file under C:\apache-tomcat-8.0.9\webapps\ibisph-content\WEB-INF\xml\user
- c. The “email_address.xml” template is saved in this folder: G:\All\IBIS\email_address.xml
- d. Set login/password/data modules/geo in email_address.xml file.
- e. Restart tomcat
- f. Test