

Installing Hudson: An Automated Build System

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This week we want to take a look at Hudson, and how to install it. Hudson is a continuous integration tool, which was released by Sun Microsystems. It is now open source software and is free to use, subject to its license.

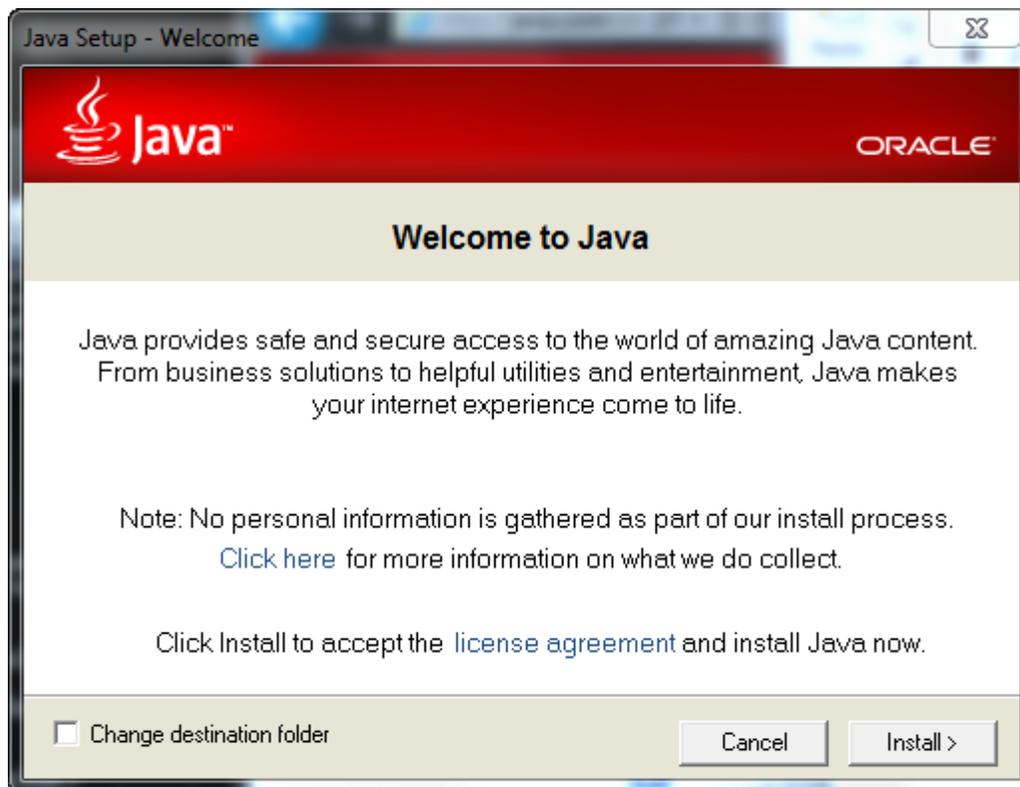
Hudson has a wide variety of add-on plugins that can be installed with it to support just about any mainstream continuous build and release need. We'll talk some more about Hudson later, but first, let's install it! We're on a Windows 7 machine, and Java is required, so let's do that first.

<http://java.com/en/download/index.jsp>



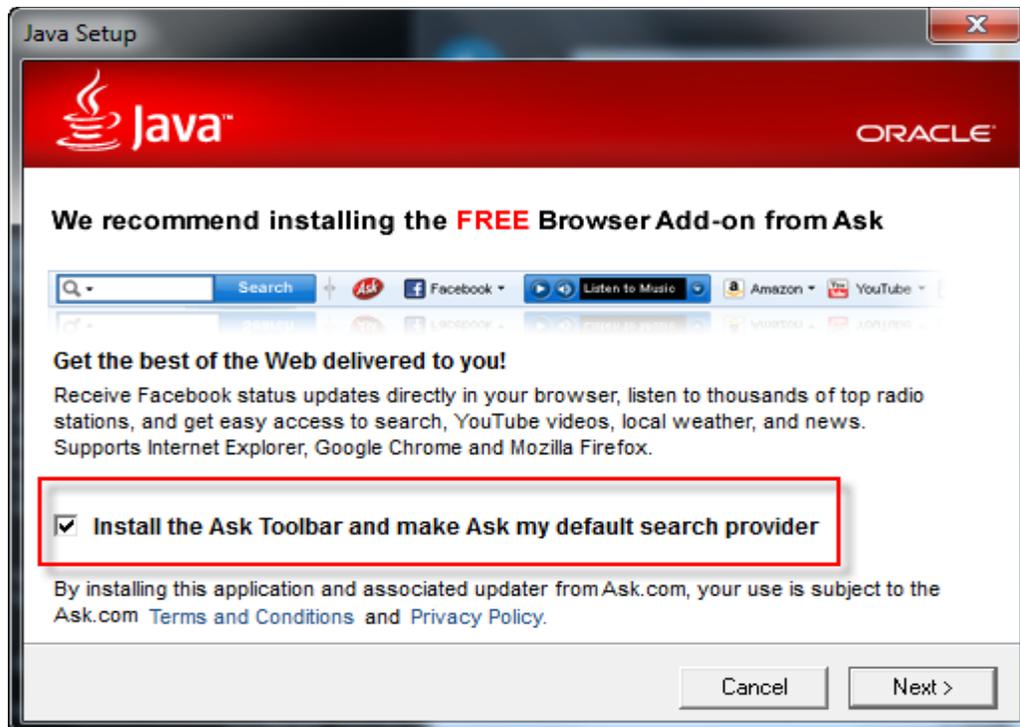
The screenshot shows the Java download page. At the top, there is a red header with the Java logo on the left, a search bar on the right, and "Download" and "Help" links in the center. Below the header, on the left, is a sidebar with links for "Looking for Java 6?", "Java 6 FAQ", "All Java Downloads", and "All Java Downloads" (repeated). The main content area features a "Free Java Download" heading, followed by the text "Download Java for your desktop computer now!" and "Version 7 Update 21". A large red button labeled "Free Java Download" is prominent. Below the button are links for "What is Java?", "Do I have Java?", and "Need Help?". Further down, there is a section titled "Why download Java?" with text explaining the benefits of Java technology. At the bottom, there is a section titled "Java software for your computer..." with a detailed description of the Java Runtime Environment. The footer contains navigation links for "Select Language", "About Java", "Support", "Developers", "Privacy", "Terms of Use", "Trademarks", and "Disclaimer", along with the Oracle logo and a URL: <http://java.com/inc/BrowserRedirect1.jsp?locale=en>.

After clicking on the Free Java Download button in the above screen, we are presented with this screen:



This is the beginning of the Java install process. There is the choice of accepting the default install location, or this can be altered by ticking the “Change destination folder” box. Then click Install.

The next install screen is displayed below:

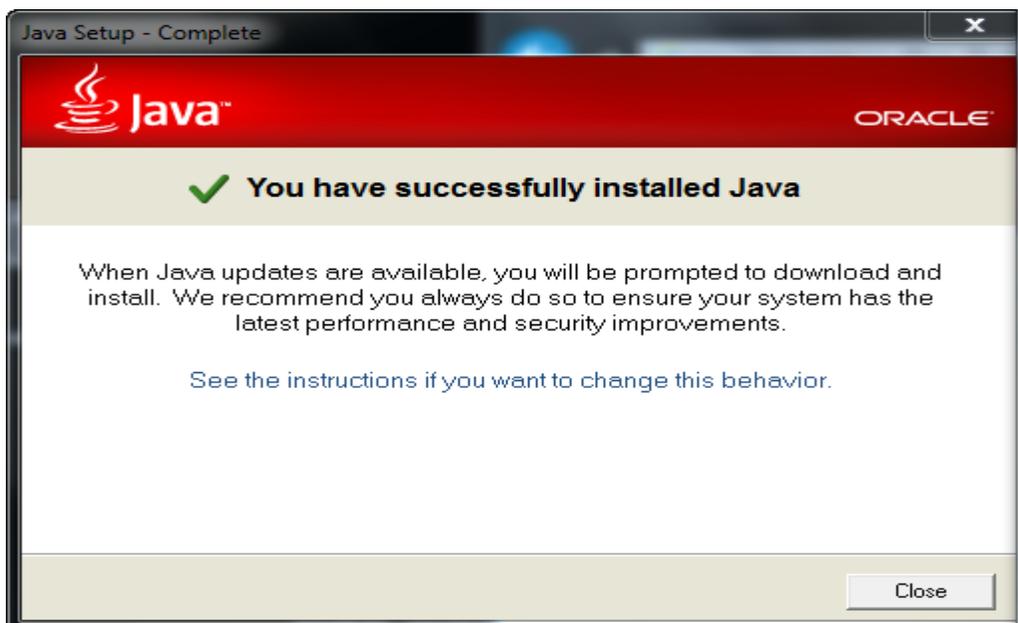


I guess this screen is how Java pays it bills. It's up to you whether or not you want another toolbar cluttering your browser. Just be aware you will get one if you don't un-tick the box authorizing the install of the toolbar. Make your choice, and click Next.

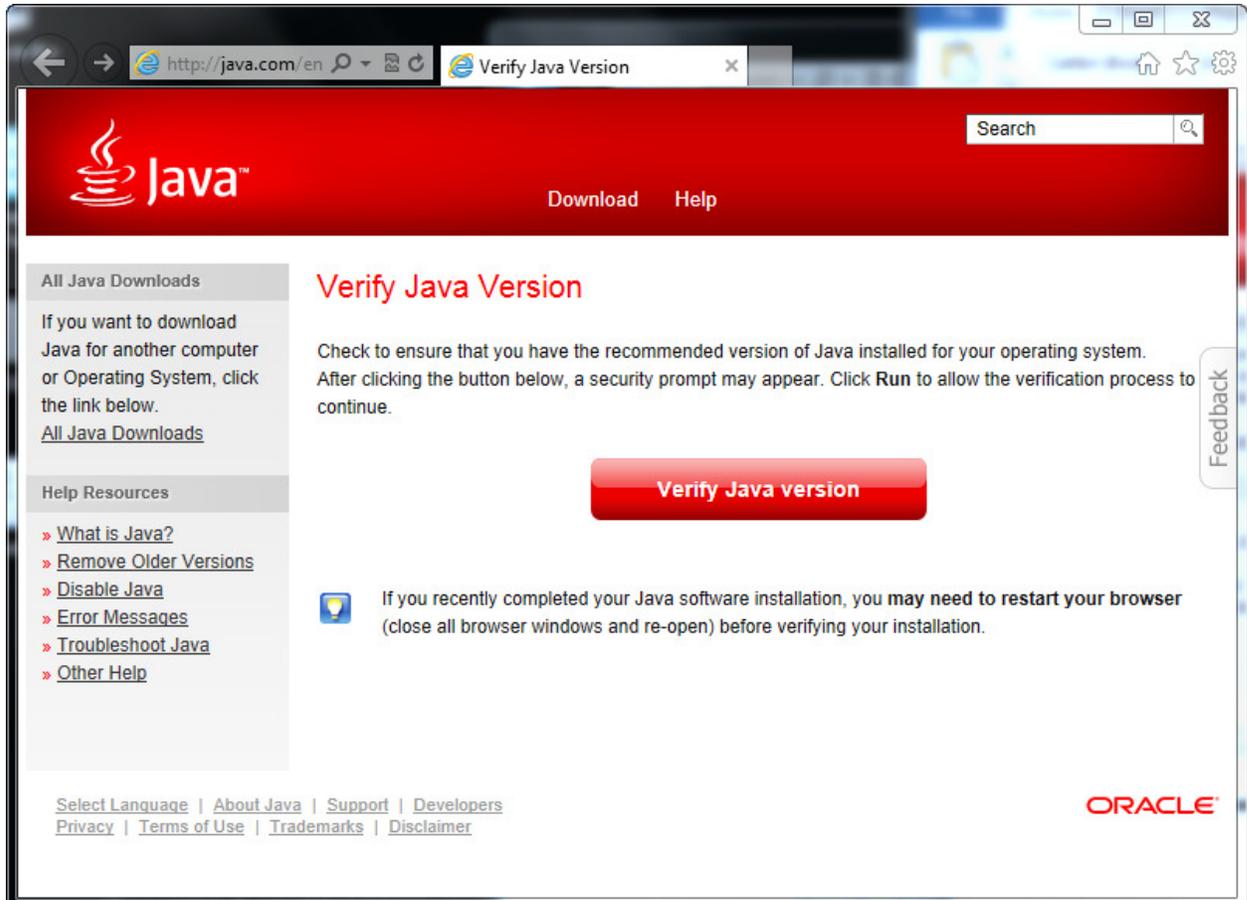
The next install pane below displays a progress bar as the install proceeds.



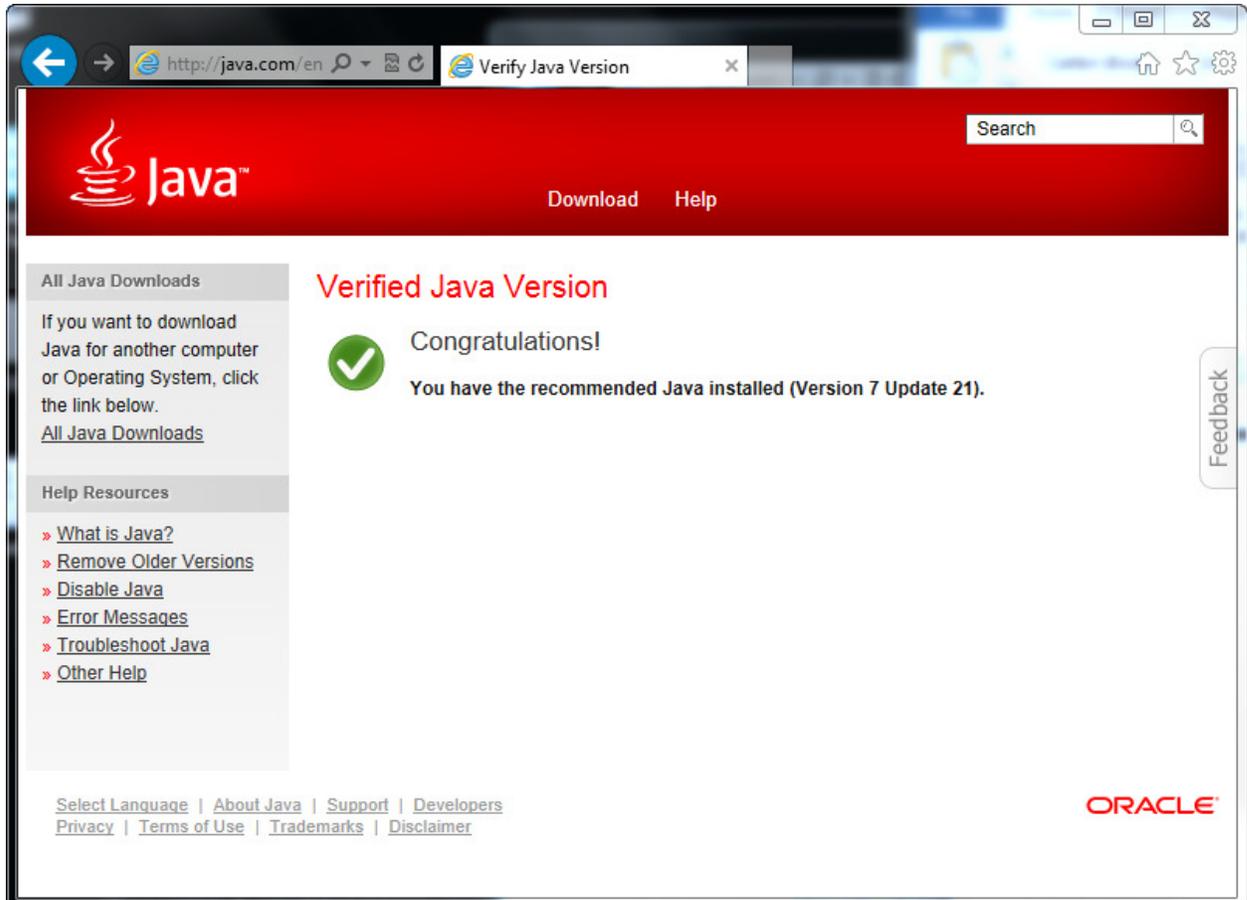
The install should run to completion, and display the next screen:



Upon successful install, click Close. After this, the install can be verified.



Clicking "Verify Java version" will run a check to insure that all went well with the install. The results are on the next screen below.

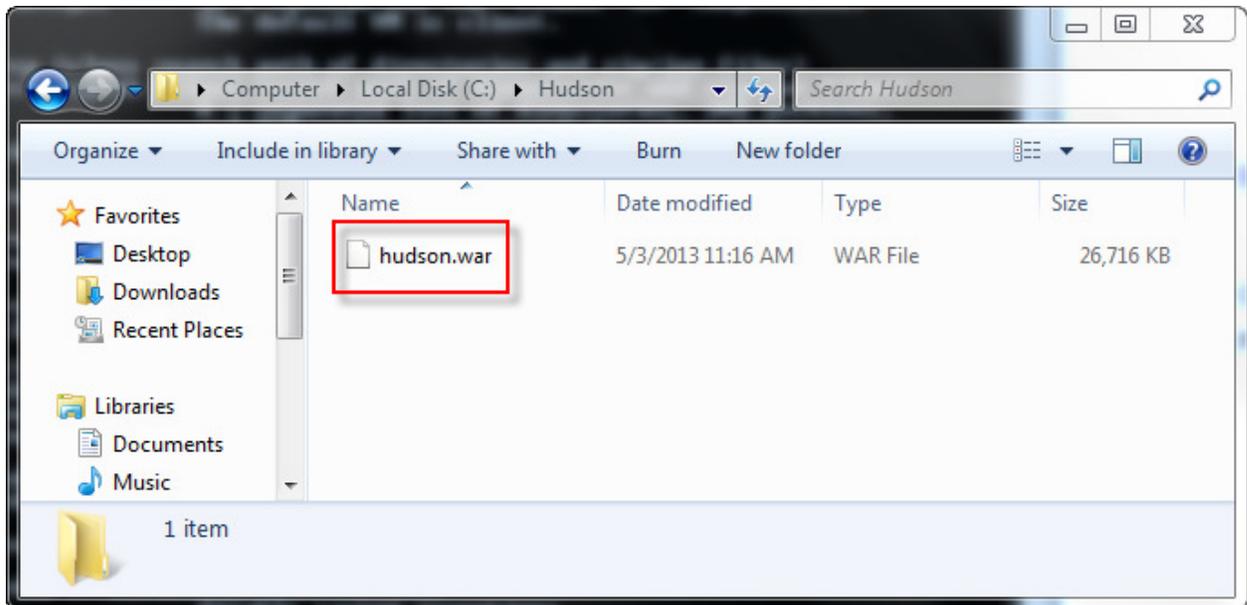


We see above that the current version has been installed and should function correctly.

All right. Now that we've taken care of the Java install, it's time to move on the main event – installing Hudson! First of all, we need the install binary, which can be found at:

<http://hudson-ci.org/downloads/war/>

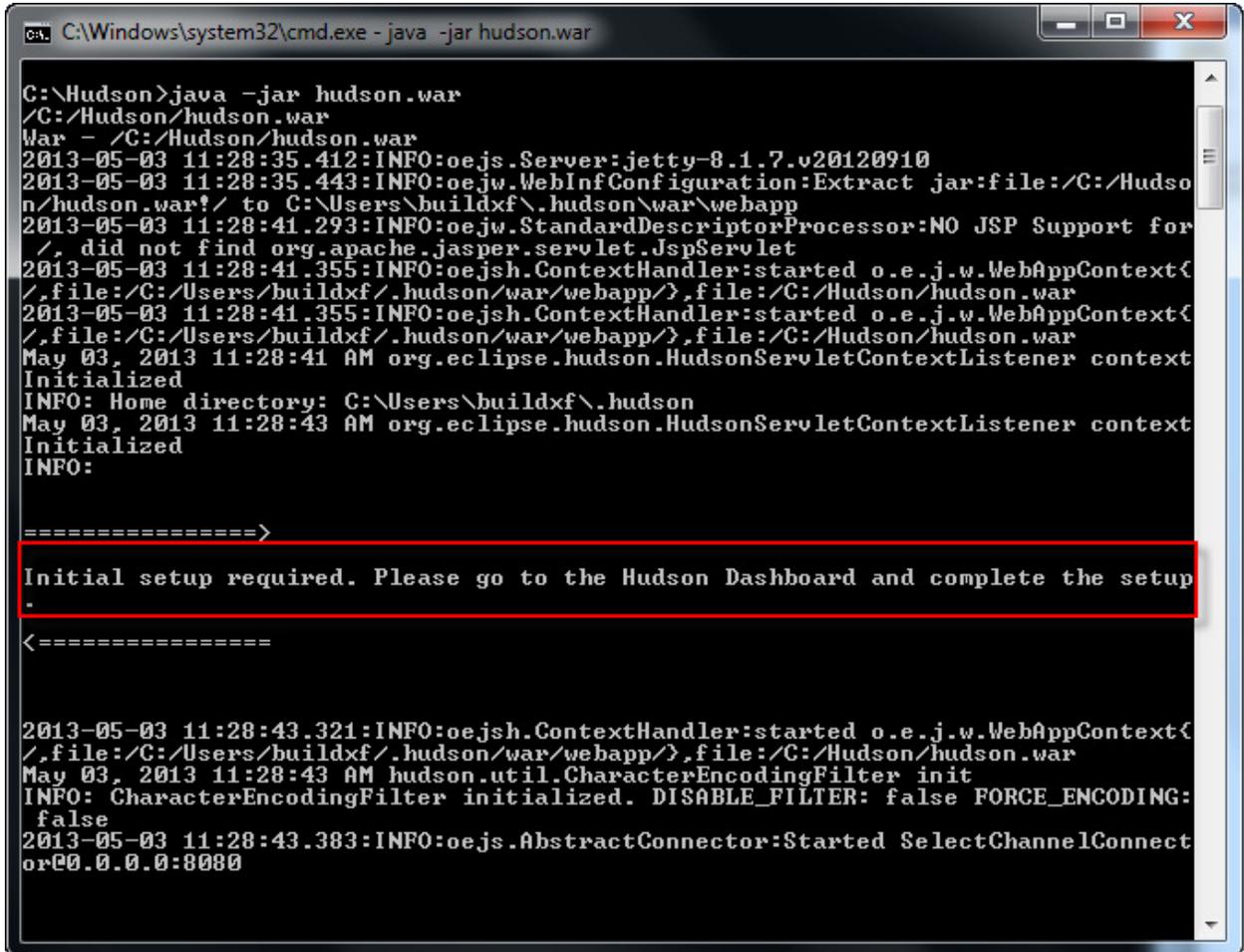
Click on 3.0.1 or whatever the latest version is. Save the download for later use by the install process. In the next screens, we can view the results of our download.



Above, we see the file that we downloaded, along with its location. Below we initiate the installation process.



To install Hudson, we change into the directory containing the Hudson.war file, and then run the command “java -jar <war_file>”. In the following screen we see the results of starting the install.



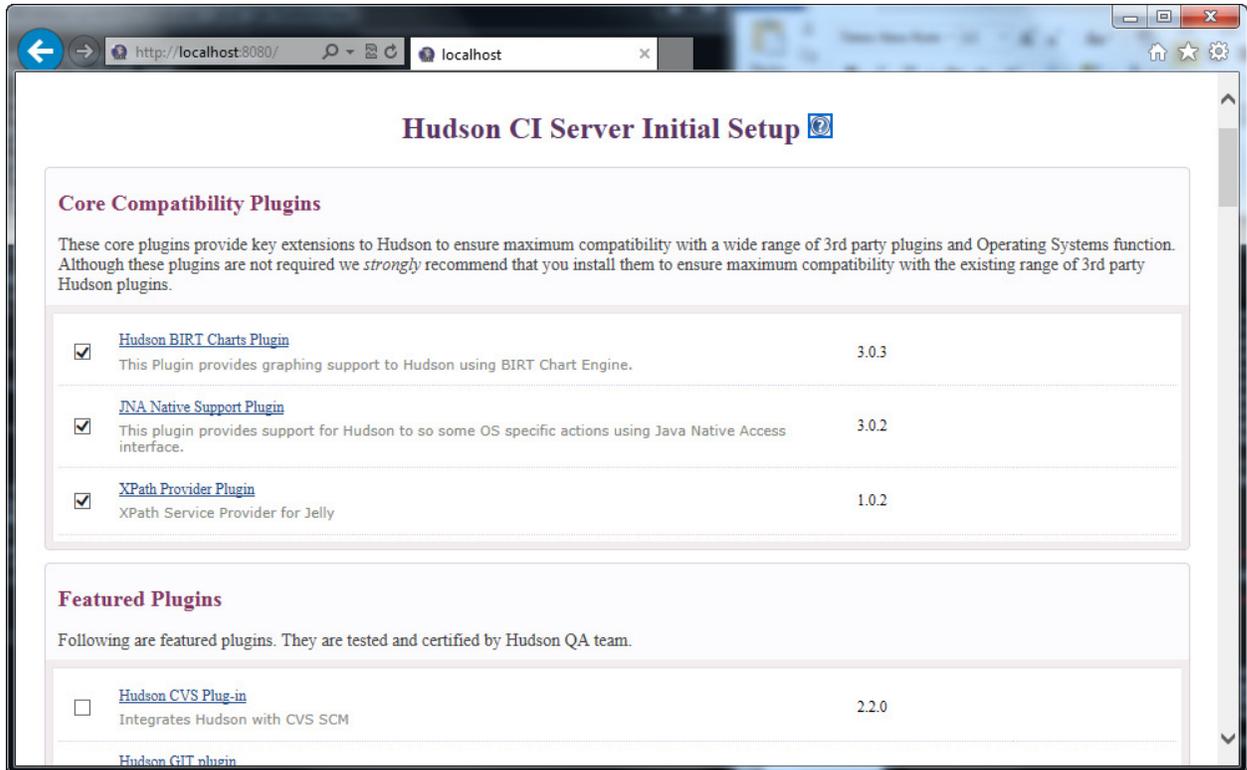
```
C:\Windows\system32\cmd.exe - java -jar hudson.war

C:\Hudson>java -jar hudson.war
/C:/Hudson/hudson.war
War - /C:/Hudson/hudson.war
2013-05-03 11:28:35.412:INFO:oejs.Server:jetty-8.1.7.v20120910
2013-05-03 11:28:35.443:INFO:oejw.WebInfConfiguration:Extract jar:file:/C:/Hudson/hudson.war! to C:\Users\buildxf\.hudson\war\webapp
2013-05-03 11:28:41.293:INFO:oejw.StandardDescriptorProcessor:NO JSP Support for /, did not find org.apache.jasper.servlet.JspServlet
2013-05-03 11:28:41.355:INFO:oejsh.ContextHandler:started o.e.j.w.WebAppContext{/,file:/C:/Users/buildxf/.hudson/war/webapp/},file:/C:/Hudson/hudson.war
2013-05-03 11:28:41.355:INFO:oejsh.ContextHandler:started o.e.j.w.WebAppContext{/,file:/C:/Users/buildxf/.hudson/war/webapp/},file:/C:/Hudson/hudson.war
May 03, 2013 11:28:41 AM org.eclipse.hudson.HudsonServletContextListener context Initialized
INFO: Home directory: C:\Users\buildxf\.hudson
May 03, 2013 11:28:43 AM org.eclipse.hudson.HudsonServletContextListener context Initialized
INFO:
=====>
Initial setup required. Please go to the Hudson Dashboard and complete the setup
.
<=====

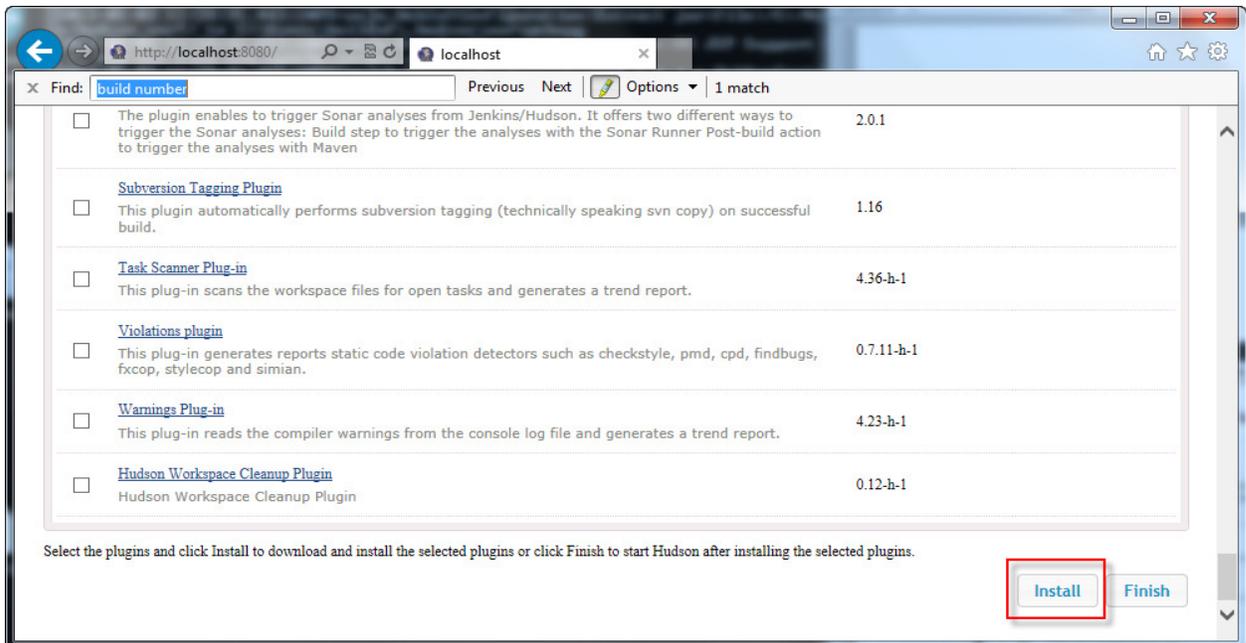
2013-05-03 11:28:43.321:INFO:oejsh.ContextHandler:started o.e.j.w.WebAppContext{/,file:/C:/Users/buildxf/.hudson/war/webapp/},file:/C:/Hudson/hudson.war
May 03, 2013 11:28:43 AM hudson.util.CharacterEncodingFilter init
INFO: CharacterEncodingFilter initialized. DISABLE_FILTER: false FORCE_ENCODING: false
2013-05-03 11:28:43.383:INFO:oejs.AbstractConnector:Started SelectChannelConnector@0.0.0.0:8080
```

Here we see the install running. It has stopped and is waiting for us to configure Hudson. This is done by launching a browser, and viewing the Hudson GUI. Use a URL such as the following: <http://localhost:8080> to begin our interaction with Hudson.

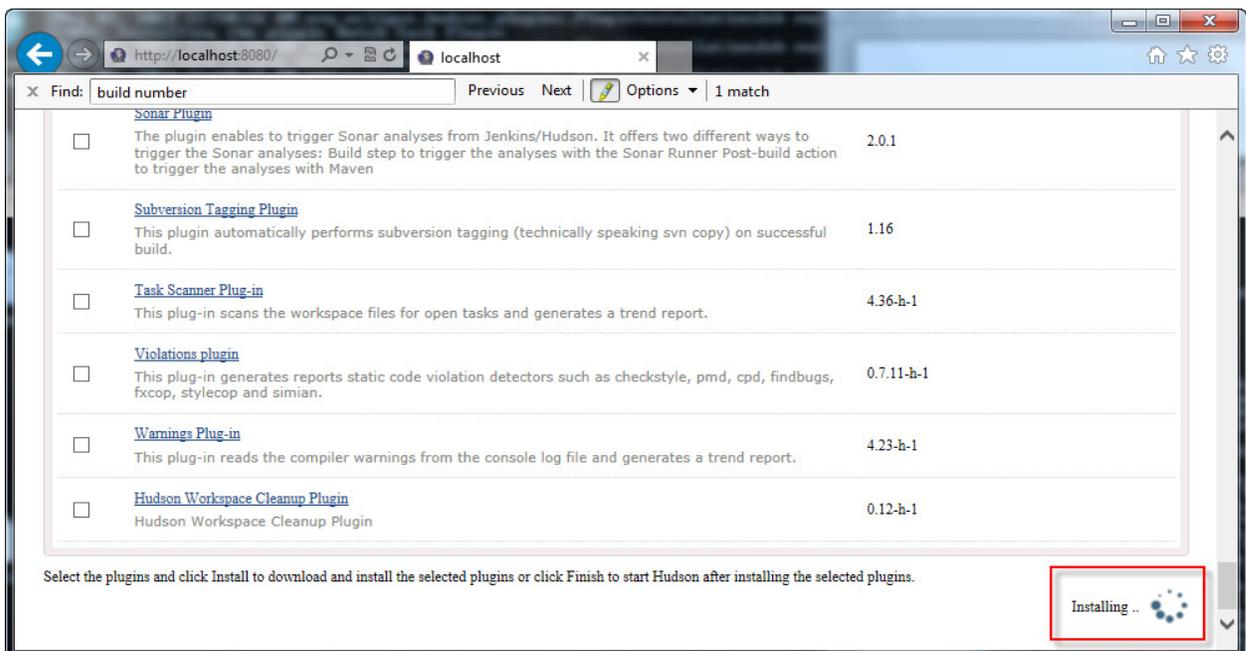
The following screens show some options for Hudson configuration. The first screen below will be for initial setup of Hudson.



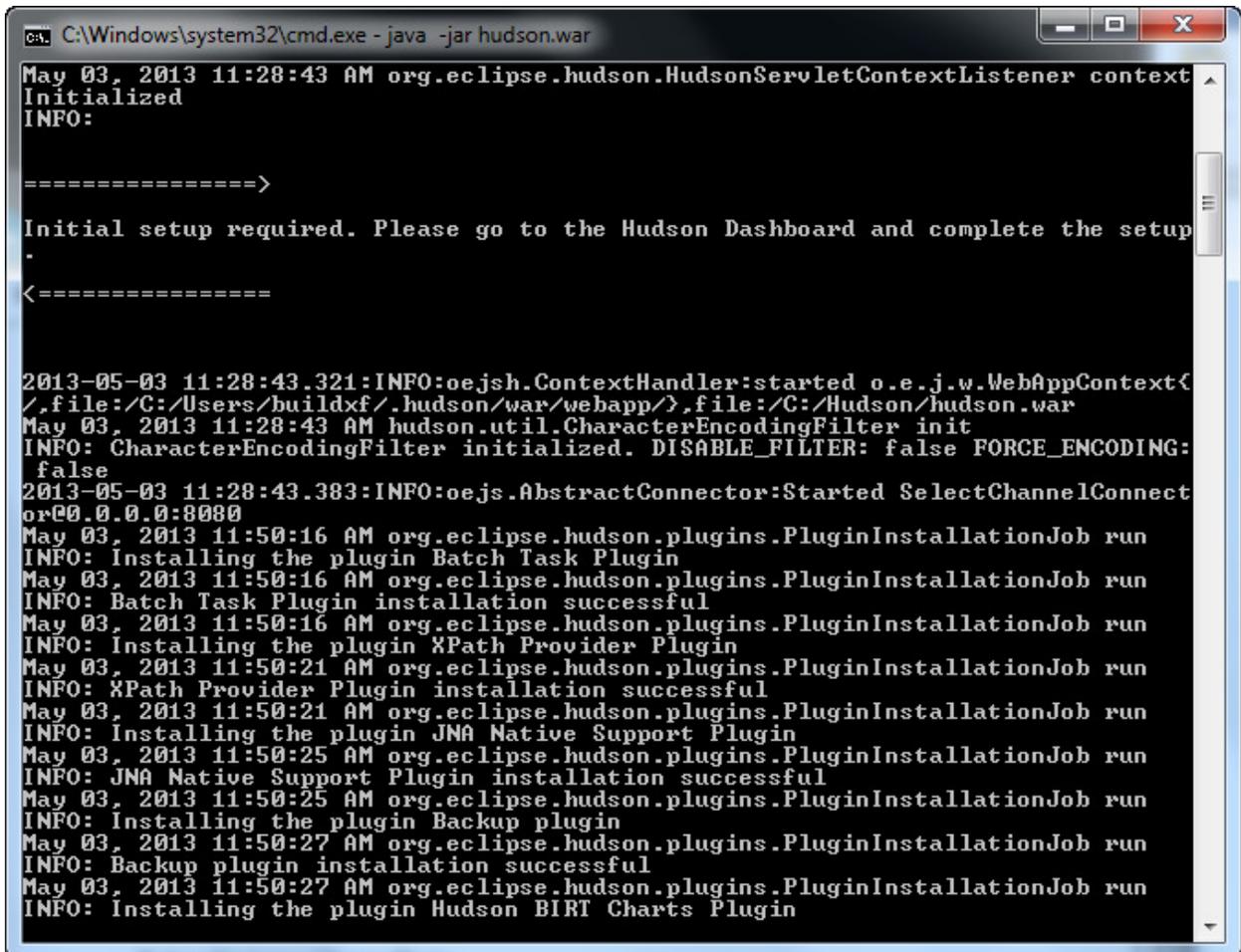
Hudson has a great variety of plug-ins that can be installed for various purposes. Proceed to look through all the (many) options, and select those plug-ins that you believe will be useful. If you can't decide now, don't worry, you can always install more plug-ins later! The next screen shows the end of the list, and how to complete the installs.



Above, we see the end of the plug-in install list. Click Install after making selections.

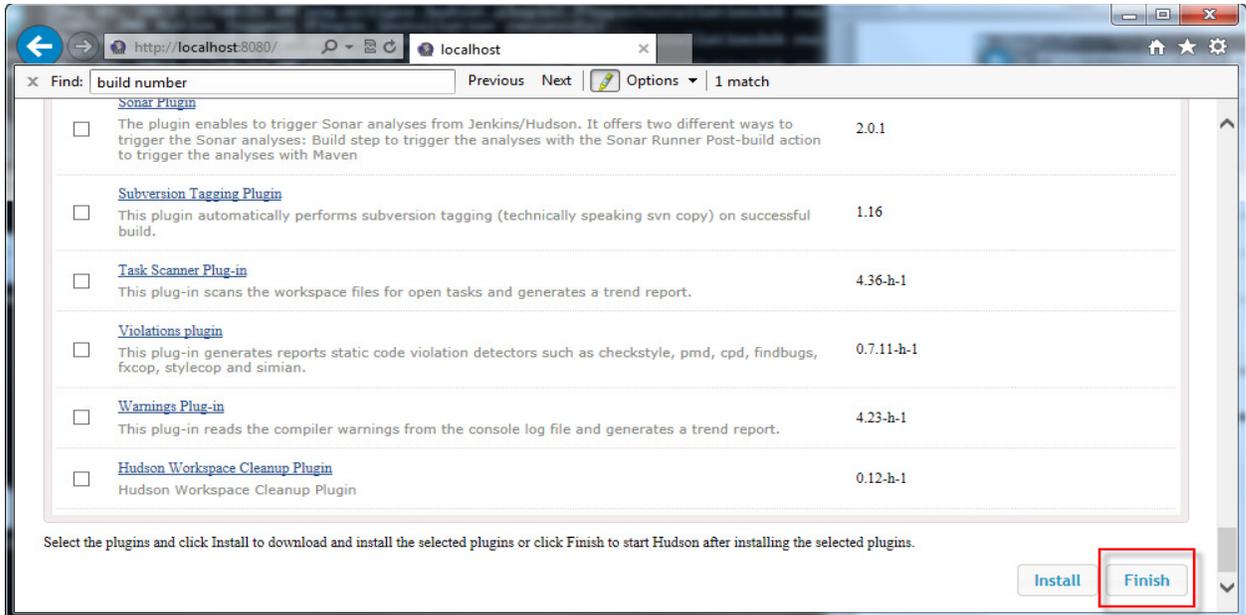


The screen above shows the install in progress. This is reflected in the line command below.

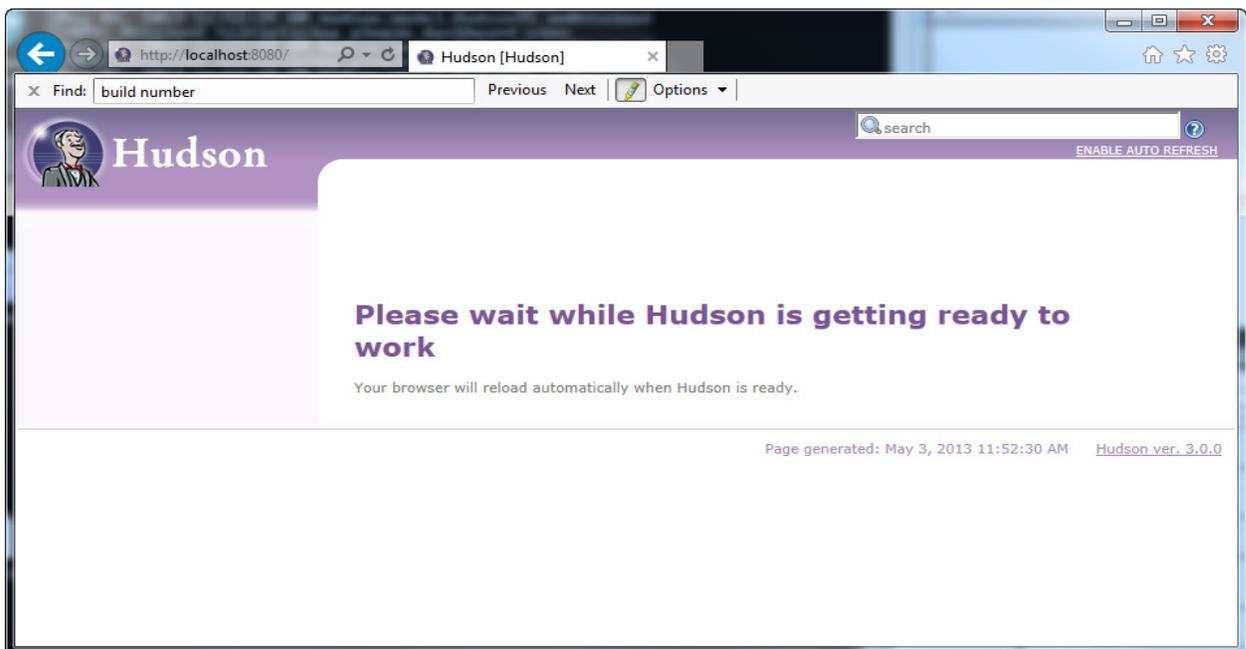


```
C:\Windows\system32\cmd.exe - java -jar hudson.war
May 03, 2013 11:28:43 AM org.eclipse.hudson.HudsonServletContextListener context
Initialized
INFO:
=====>
Initial setup required. Please go to the Hudson Dashboard and complete the setup
.
<=====
2013-05-03 11:28:43.321:INFO:oejsh.ContextHandler:started o.e.j.w.WebAppContext<
/,file:/C:/Users/buildxf/.hudson/war/webapp/},file:/C:/Hudson/hudson.war
May 03, 2013 11:28:43 AM hudson.util.CharacterEncodingFilter init
INFO: CharacterEncodingFilter initialized. DISABLE_FILTER: false FORCE_ENCODING:
false
2013-05-03 11:28:43.383:INFO:oejs.AbstractConnector:Started SelectChannelConnect
or@0.0.0.0:8080
May 03, 2013 11:50:16 AM org.eclipse.hudson.plugins.PluginInstallationJob run
INFO: Installing the plugin Batch Task Plugin
May 03, 2013 11:50:16 AM org.eclipse.hudson.plugins.PluginInstallationJob run
INFO: Batch Task Plugin installation successful
May 03, 2013 11:50:16 AM org.eclipse.hudson.plugins.PluginInstallationJob run
INFO: Installing the plugin XPath Provider Plugin
May 03, 2013 11:50:21 AM org.eclipse.hudson.plugins.PluginInstallationJob run
INFO: XPath Provider Plugin installation successful
May 03, 2013 11:50:21 AM org.eclipse.hudson.plugins.PluginInstallationJob run
INFO: Installing the plugin JNA Native Support Plugin
May 03, 2013 11:50:25 AM org.eclipse.hudson.plugins.PluginInstallationJob run
INFO: JNA Native Support Plugin installation successful
May 03, 2013 11:50:25 AM org.eclipse.hudson.plugins.PluginInstallationJob run
INFO: Installing the plugin Backup plugin
May 03, 2013 11:50:27 AM org.eclipse.hudson.plugins.PluginInstallationJob run
INFO: Backup plugin installation successful
May 03, 2013 11:50:27 AM org.eclipse.hudson.plugins.PluginInstallationJob run
INFO: Installing the plugin Hudson BIRT Charts Plugin
```

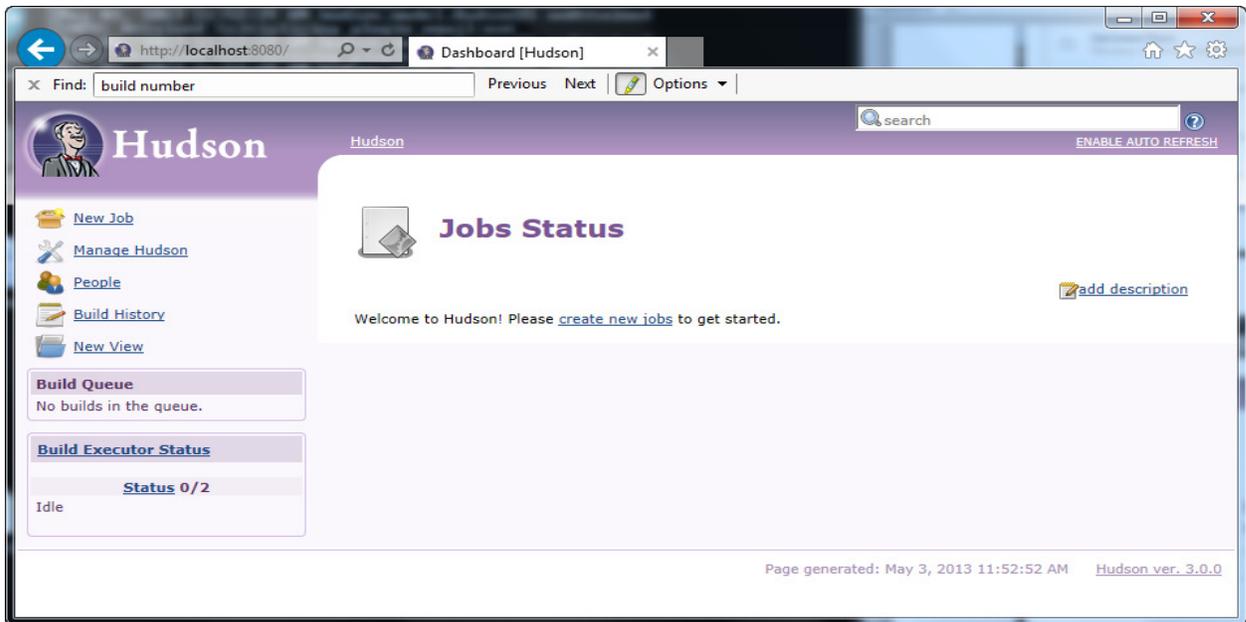
After clicking Install above, we can see the progress displayed in the still running line command. We note the different plug-ins being installed, and then we proceed to the next screen, which lets us complete the initial phase of Hudson installation.



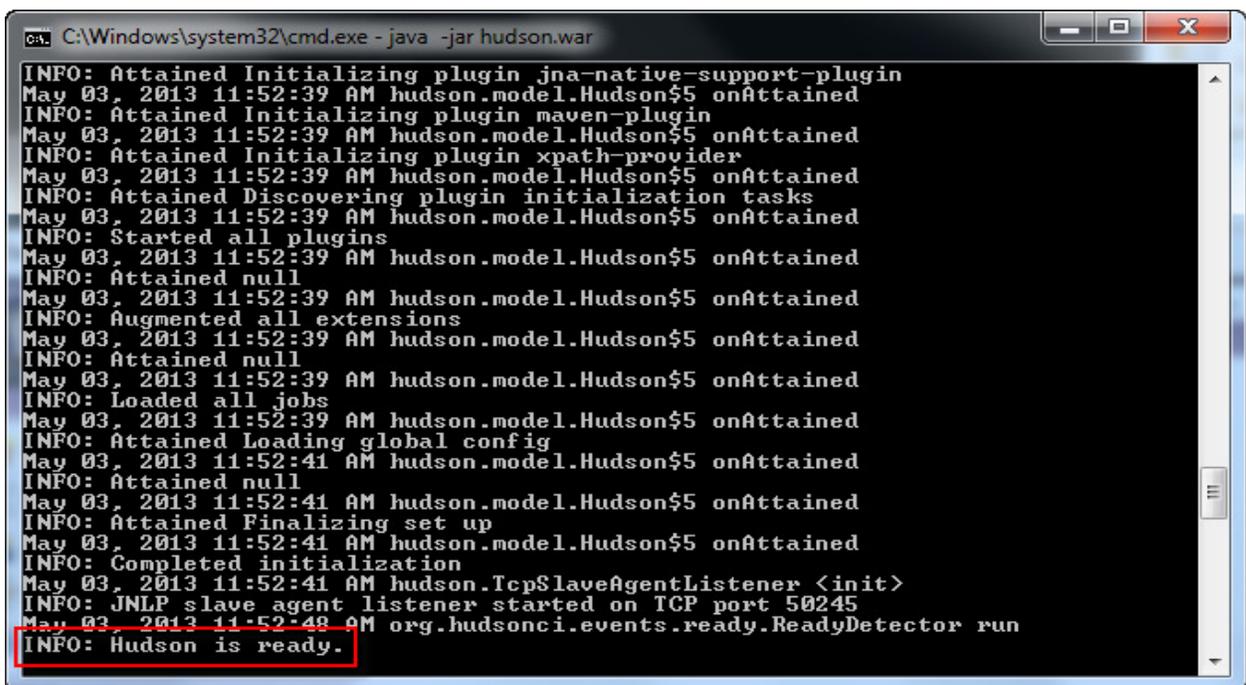
We can see above that the initial install of our plug-ins has completed. Click Finish to activate Hudson for use.



Above we see Hudson beginning to restart itself. Below we see Hudson ready for further configuration.

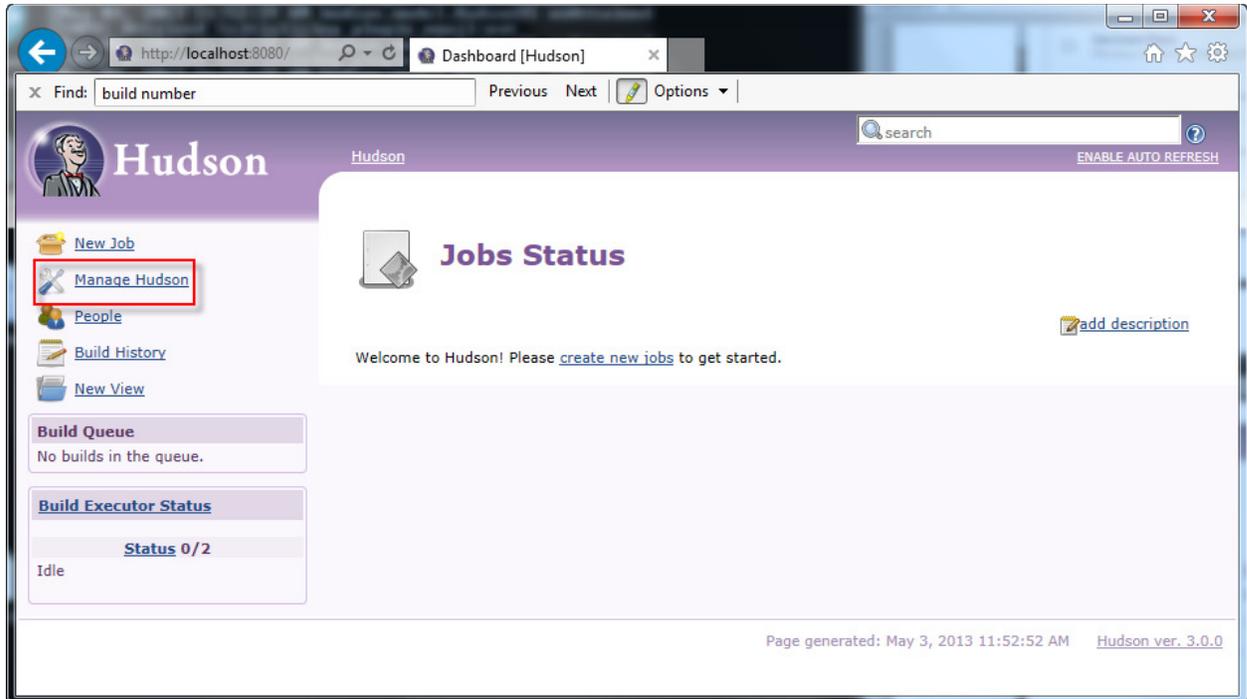


Hudson is now operational. See the progress in the line command below:



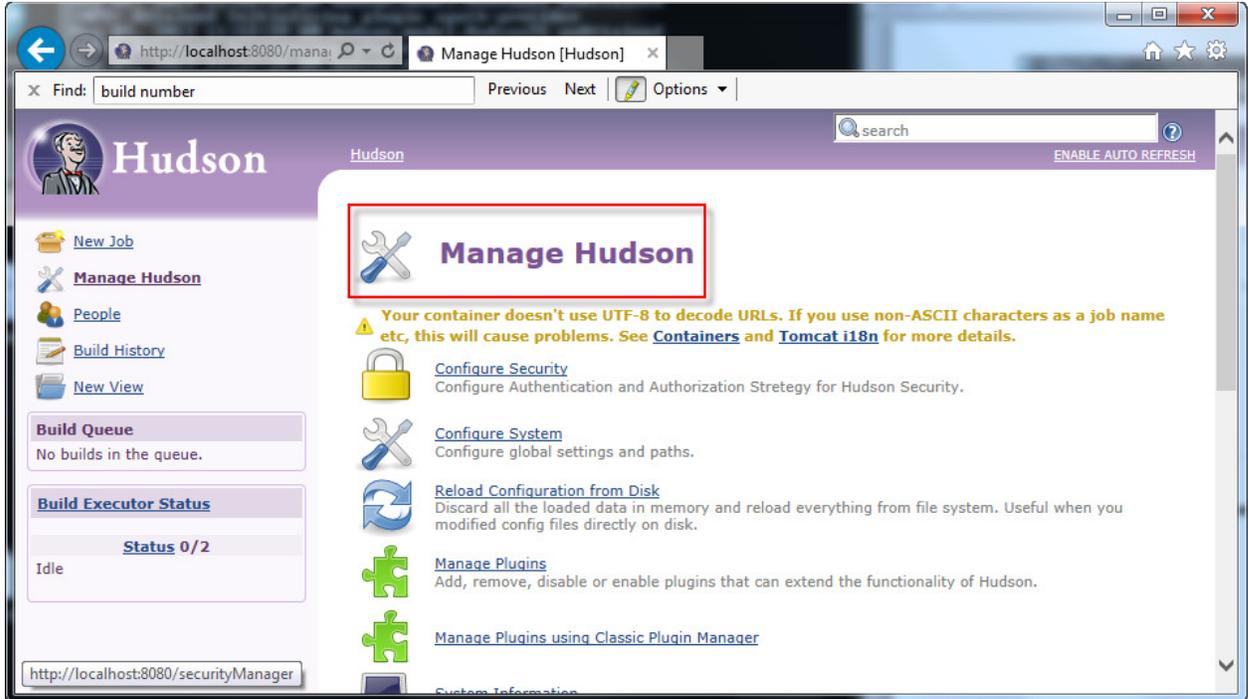
```
C:\Windows\system32\cmd.exe - java -jar hudson.war
INFO: Attained Initializing plugin jna-native-support-plugin
May 03, 2013 11:52:39 AM hudson.model.Hudson$5 onAttained
INFO: Attained Initializing plugin maven-plugin
May 03, 2013 11:52:39 AM hudson.model.Hudson$5 onAttained
INFO: Attained Initializing plugin xpath-provider
May 03, 2013 11:52:39 AM hudson.model.Hudson$5 onAttained
INFO: Attained Discovering plugin initialization tasks
May 03, 2013 11:52:39 AM hudson.model.Hudson$5 onAttained
INFO: Started all plugins
May 03, 2013 11:52:39 AM hudson.model.Hudson$5 onAttained
INFO: Attained null
May 03, 2013 11:52:39 AM hudson.model.Hudson$5 onAttained
INFO: Augmented all extensions
May 03, 2013 11:52:39 AM hudson.model.Hudson$5 onAttained
INFO: Attained null
May 03, 2013 11:52:39 AM hudson.model.Hudson$5 onAttained
INFO: Loaded all jobs
May 03, 2013 11:52:39 AM hudson.model.Hudson$5 onAttained
INFO: Attained Loading global config
May 03, 2013 11:52:41 AM hudson.model.Hudson$5 onAttained
INFO: Attained null
May 03, 2013 11:52:41 AM hudson.model.Hudson$5 onAttained
INFO: Attained Finalizing set up
May 03, 2013 11:52:41 AM hudson.model.Hudson$5 onAttained
INFO: Completed initialization
May 03, 2013 11:52:41 AM hudson.TcpSlaveAgentListener <init>
INFO: JNLP slave agent listener started on ICP port 50245
May 03, 2013 11:52:48 AM org.hudsonci.events.ready.ReadyDetector run
INFO: Hudson is ready.
```

We can see that Hudson is now ready for use. But there is a bit more that we want to do, which will be explained in the upcoming screens.



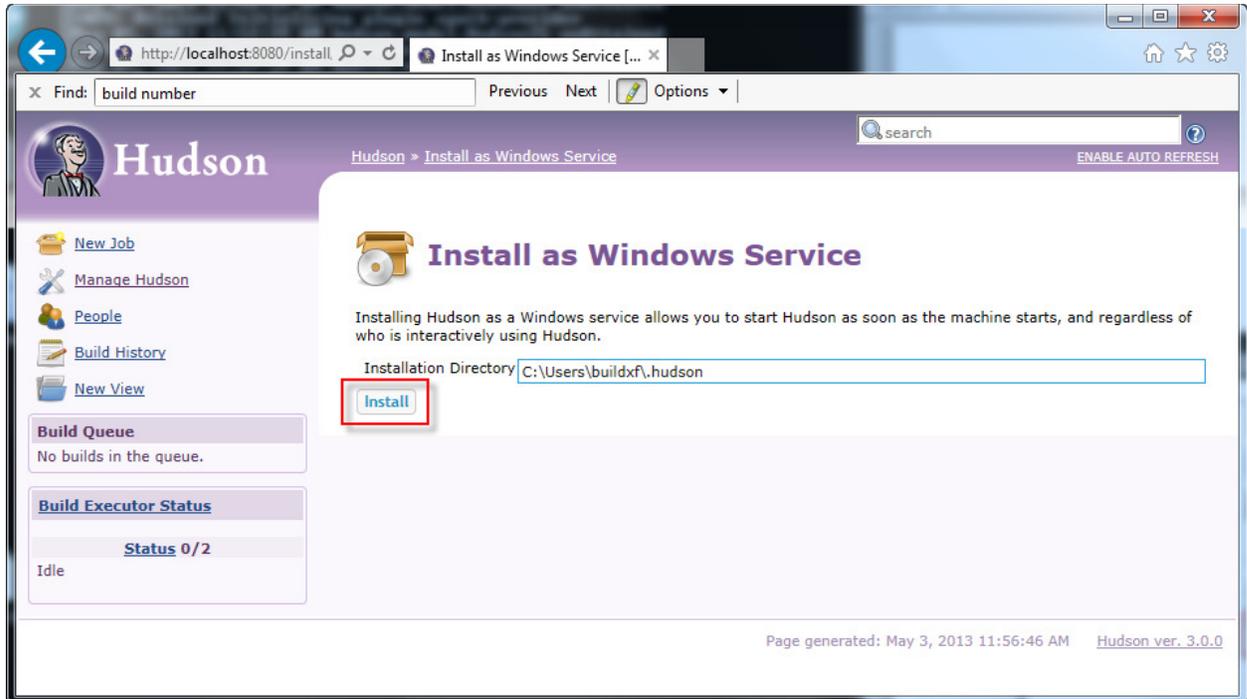
Here is where we now are. Hudson is running from the command window that we initially opened for the installation of this application. Although we can use it while it is in this state, we probably don't want to continue with this configuration. Instead we would like to install Hudson as a Windows service so that Hudson will start up along with Windows during any reboot.

To add Hudson as a started task, we need to do a bit more configuration of Hudson. Click the Manage Hudson link in the above screen. We are then taken to a screen where we can configure Hudson, shown below.



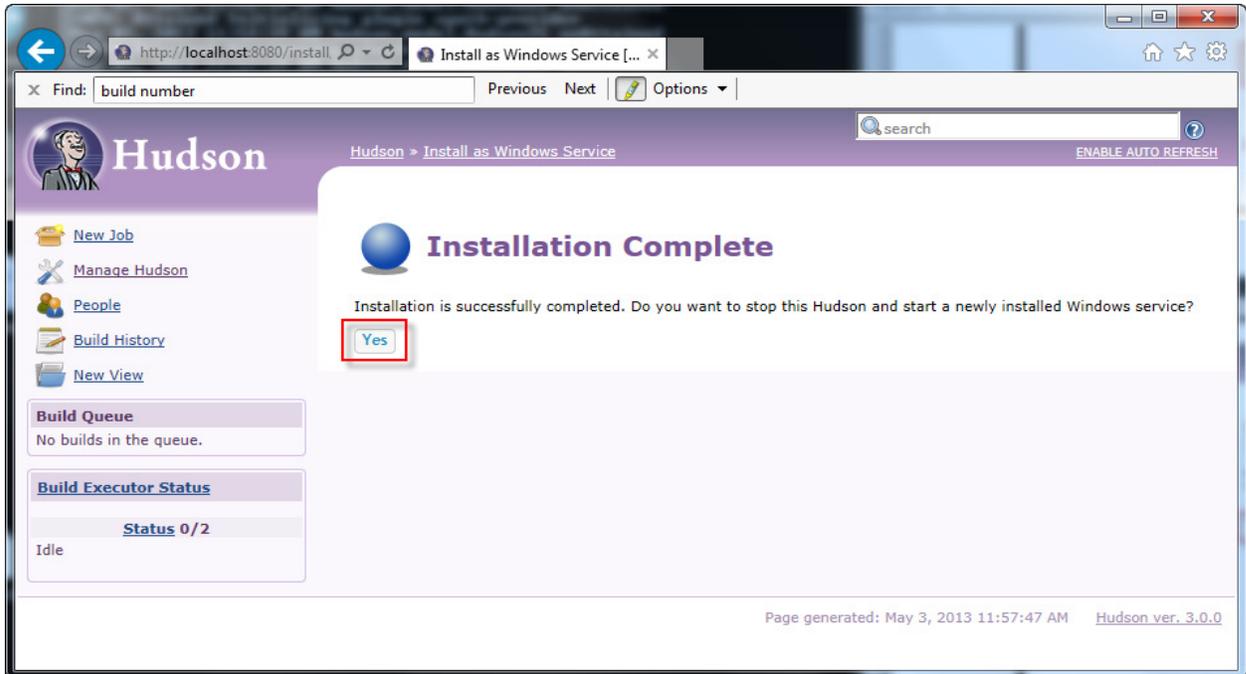
To install Hudson as a Windows service, click the link in the screen below.



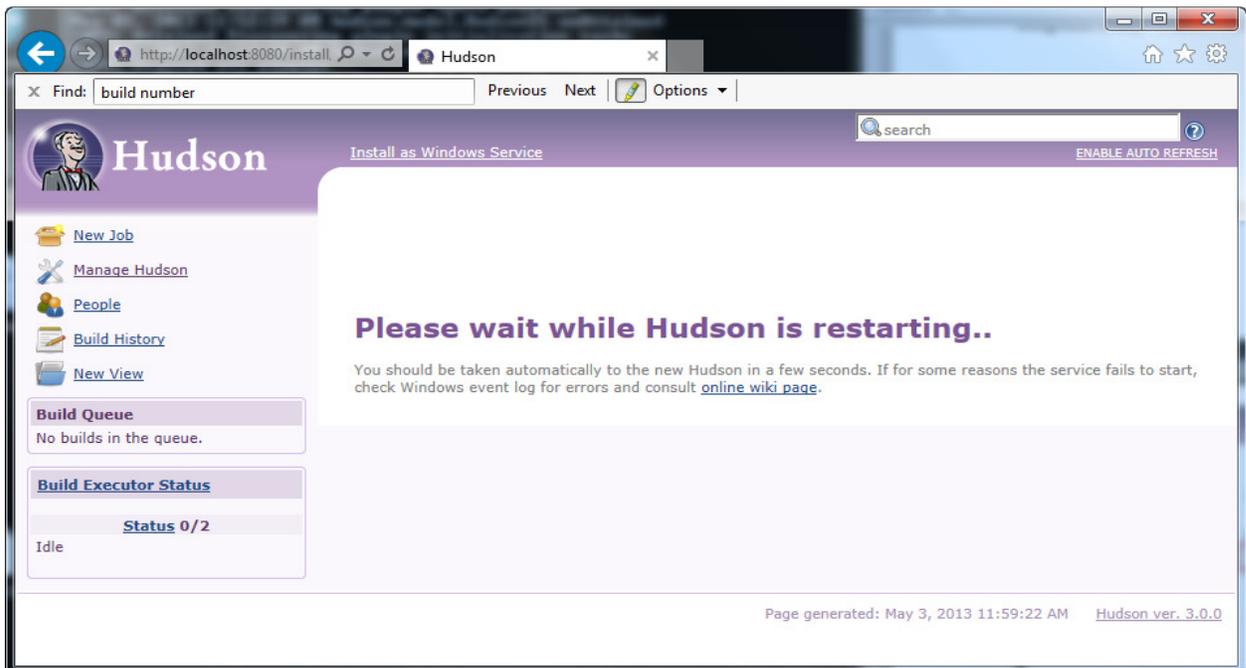


Click Install to begin the installation of Hudson as a Windows service. Respond to any Windows security and allow the installation to continue. When this is completed, we will no longer need the command prompt to use Hudson.

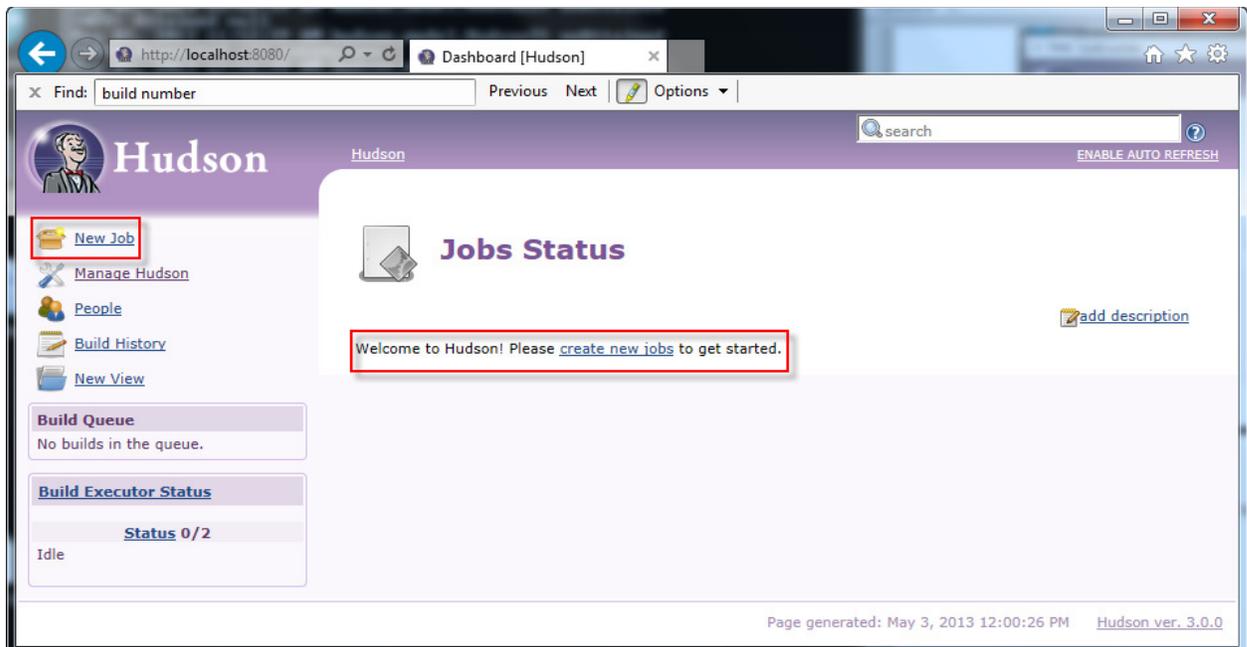
The screens below shows the completion of the Windows service installation.



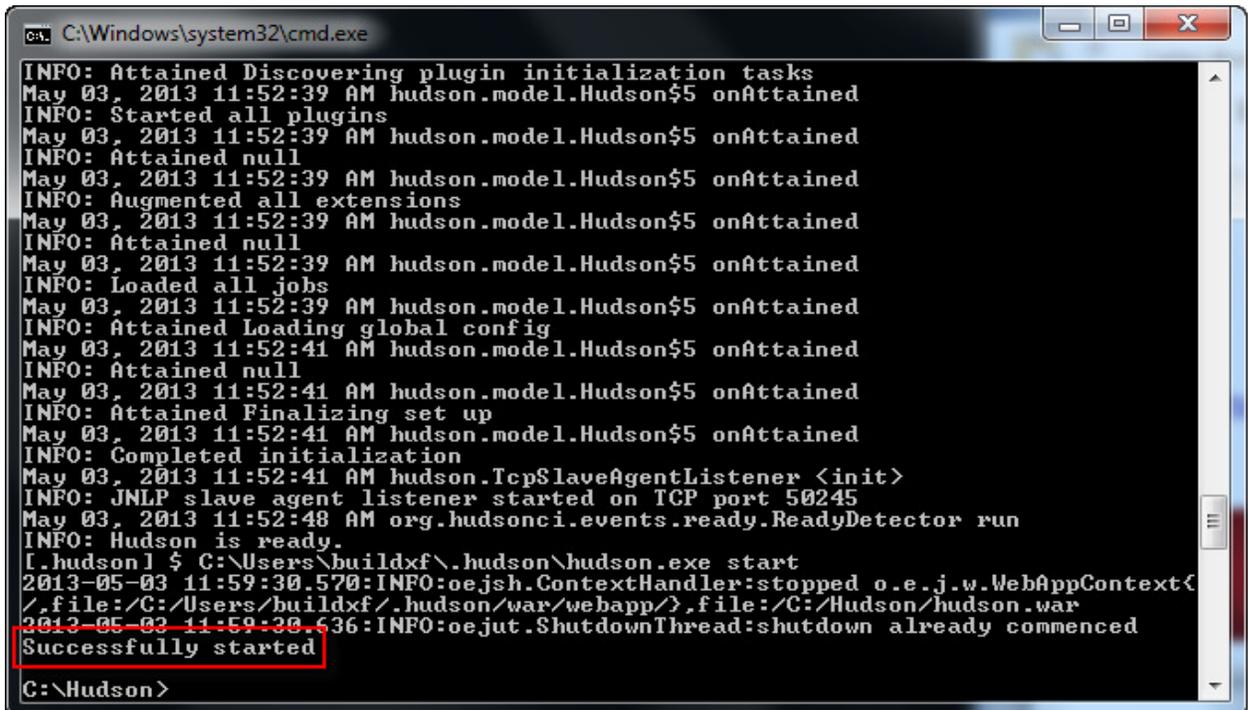
Click Yes, above to restart Hudson as a Windows service.



Hudson is restarting itself as a Windows service. The next screen shows the result.



Hudson is now fully installed on Windows and ready for use! See the results below in the command window:



```
C:\Windows\system32\cmd.exe
INFO: Attained Discovering plugin initialization tasks
May 03, 2013 11:52:39 AM hudson.model.Hudson$5 onAttained
INFO: Started all plugins
May 03, 2013 11:52:39 AM hudson.model.Hudson$5 onAttained
INFO: Attained null
May 03, 2013 11:52:39 AM hudson.model.Hudson$5 onAttained
INFO: Augmented all extensions
May 03, 2013 11:52:39 AM hudson.model.Hudson$5 onAttained
INFO: Attained null
May 03, 2013 11:52:39 AM hudson.model.Hudson$5 onAttained
INFO: Loaded all jobs
May 03, 2013 11:52:39 AM hudson.model.Hudson$5 onAttained
INFO: Attained Loading global config
May 03, 2013 11:52:41 AM hudson.model.Hudson$5 onAttained
INFO: Attained null
May 03, 2013 11:52:41 AM hudson.model.Hudson$5 onAttained
INFO: Attained Finalizing set up
May 03, 2013 11:52:41 AM hudson.model.Hudson$5 onAttained
INFO: Completed initialization
May 03, 2013 11:52:41 AM hudson.model.Hudson$5 onAttained
INFO: JNLP slave agent listener started on TCP port 50245
May 03, 2013 11:52:48 AM org.hudsonci.events.ready.ReadyDetector run
INFO: Hudson is ready.
[.hudson] $ C:\Users\buildxf\.hudson\hudson.exe start
2013-05-03 11:59:30.570:INFO:oejsh.ContextHandler:stopped o.e.j.w.WebAppContext(
/.file:/C:/Users/buildxf/.hudson/war/webapp/),file:/C:/Hudson/hudson.war
2013-05-03 11:59:30.636:INFO:oejut.ShutdownThread:shutdown already commenced
Successfully started
C:\Hudson>
```



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The last screenshot above shows that the command window has fully completed its installation and it is now out of the loop. Hudson is now a Windows service, and will start up when Windows boots up. This concludes the topic that we wanted to cover today, the installation of Hudson. Next time, let's have a look at configuring a job and starting a build using Hudson!