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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

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<u>Select Language</u> <u>About Java</u> <u>Privace</u> + <u>Terme of Use</u> <u>Ter</u> <u>http://java.com/inc/BrowserRe</u>	Java software for your computer, or the Java Runtime Environment, is also referred to as the Java Runtime, Runtime Environment, Runtime, JRE, Java Virtual Machine, Virtual Machine, Java VM, JVM, VM, Java plug-in, or Java download.	~



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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:



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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 untick 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.



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



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



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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.



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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.

C:\Windows\system32\cmd.exe	3
C:\Hudson>java -jar hudson.war	
	-

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:/Hudso n/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 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 2013-05-03 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 SelectChannelConnect orCO.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: <u>http://localhost:8080</u> 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 CI Server Initial Setup	2
Core These (Compatibility Plugins	3rd party plugins and Operating Systems function.
Hudson	gn mese plugins are not required we strongly recommend that you instant them to ensure maximum con a plugins.	inpationity with the existing range or 510 party
	<u>Hudson BIRT Charts Plugin</u> This Plugin provides graphing support to Hudson using BIRT Chart Engine.	3.0.3
	<u>JNA Native Support Plugin</u> This plugin provides support for Hudson to so some OS specific actions using Java Native Access interface.	3.0.2
	<u>XPath Provider Plugin</u> XPath Service Provider for Jelly	1.0.2
Featu	ired Plugins	
Follow	ing are featured plugins. They are tested and certified by Hudson QA team.	
	Hudson CVS Plug-in Integrates Hudson with CVS SCM	2.2.0
	Hudson GIT nlugin	

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.



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Subver	gger the analyses with maven		
build.	anon regule rugui plugin automatically performs subversion tagging (technically speaking svn copy) on successful	1.16	
Task S	Scanner Plug-in plug-in scans the workspace files for open tasks and generates a trend report.	4.36-h-1	
<u>Violat</u> □ This p fxcop	ions plugin olug-in generates reports static code violation detectors such as checkstyle, pmd, cpd, findbugs, , stylecop and simian.	0.7.11-h-1	
□ <mark>Wami</mark> This p	ngs Plug-in plug-in reads the compiler warnings from the console log file and generates a trend report.	4.23-h-1	
Hudso Hudso	on Workspace Cleanup Plugin on Workspace Cleanup Plugin	0.12-h-1	

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

nd: bu	Id number Previous Next V Uptions V 1 match		
	The plugin enables to trigger Sonar analyses from Jenkins/Hudson. It offers two different ways to trigger the Sonar analyses: Build step to trigger the analyses with the Sonar Runner Post-build action to trigger the analyses with Maven	2.0.1	
	Subversion Tagging Plugin This plugin automatically performs subversion tagging (technically speaking svn copy) on successful build.	1.16	
	<u>Task Scanner Plug-in</u> This plug-in scans the workspace files for open tasks and generates a trend report.	4.36-h-1	
	<u>Violations plugin</u> This plug-in generates reports static code violation detectors such as checkstyle, pmd, cpd, findbugs, fxcop, stylecop and simian.	0.7.11-h-1	
	<u>Warnings Plug-in</u> This plug-in reads the compiler warnings from the console log file and generates a trend report.	4.23-h-1	
	<u>Hudson Workspace Cleanup Plugin</u> Hudson Workspace Cleanup Plugin	0.12-h-1	

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@.0.0.0:8080 May 03, 2013 11:50:16 AM org.eclipse.hudson.plugins.PluginInstallationJob run INPO: Installing the plugin Patch Tack Plugin	
May 03, 2013 11:50:16 AM org.eclipse.hudson.plugins.PluginInstallationJob run INFO: Ratch 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 HM org.eclipse.hudson.plugins.PluginInstallationJob run INFO: Backup plugin installation successful	
INFO: Installing the plugin Hudson BIRT Charts Plugin	-
	<u> </u>

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.



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Sonar Plugin The plugin enables to trigger Sonar analyses from Jenkins/Hudson. It offers two different ways to trigger the Sonar analyses: Build step to trigger the analyses with the Sonar Runner Post-build action to trigger the analyses with Maven 2.0.1 Subversion Tagging Plugin 1.16 This plugin automatically performs subversion tagging (technically speaking svn copy) on successful build. 1.16 Task Scamer Plug-in 4.36-h-1 This plugin scans the workspace files for open tasks and generates a trend report. 0.711 h 1	
Subversion Tagging Plugin This plugin automatically performs subversion tagging (technically speaking svn copy) on successful 1.16 Task Scamer Plug-in This plug-in scans the workspace files for open tasks and generates a trend report. 4.36-h-1 Violations plugin 0.711 b 1	
Task Scanner Plug-in 4.36-b-1 This plug-in scans the workspace files for open tasks and generates a trend report. 4.36-b-1 Violations plugin 0.711 b 1	
Violations plugin	
This plug-in generates reports static code violation detectors such as checkstyle, pmd, cpd, findbugs, 0.7.11-0-1 fxcop, stylecop and simian.	
Warnings Plug-in This plug-in reads the compiler warnings from the console log file and generates a trend report. 4.23-h-1	
Hudson Workspace Cleanup Plugin Hudson Workspace Cleanup Plugin 0.12-h-1	

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.



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

C:\Windows\system32\cmd.exe - java -jar hudson.war	- D X	J
INFO: Attained Initializing plugin jna-native-support-plugin		-
nay 03, 2013 11:52:37 HM Augson.model.Hugson35 onHttained		
Mau 03, 2013 11:52:39 AM budson-model HudsonSS 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		
Nay 03, 2013 11:52:39 HM hudson.model.Hudson\$5 onHttained		
INFU: HTTAINEA NUII Mau 62 - 2012 11:52:20 AM budgen medel Hudgenés erőttained		
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		
nay 03, 2013 11:52:41 HM Audson.model.Hudson95 onHttained INFO: Attained pull		
Mau 03 2013 11:52:41 AM budson model Hudson\$5 onAttained	E	1
INFO: Attained Finalizing set un		
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></init>		
INFO: JNLP slave agent listener started on TCP port 50245		
The U.S. 2013 11-52-48 PM 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.



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(←) ⊕ http://localhost:8080/	クープ Q Dashboard [Hudson] ×	合 公 袋
× Find: build number	Previous Next 📝 Options 🔻	
Hudson	Hudson	Search ENABLE AUTO REFRESH
 <u>New Job</u> <u>Manage Hudson</u> <u>People</u> Build History 	Jobs Status	Zadd description
New View		
No builds in the queue.		
Build Executor Status		
<u>Status</u> 0/2 Idle		
	Page g	enerated: May 3, 2013 11:52:52 AM <u>Hudson ver. 3.0.0</u>

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.

Do 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.



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





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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.



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



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



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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	
INTO: Started all plugins Mau 02 - 2013 11:52:39 AM budson 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 11:52:37 HM hudson.model.Hudson\$5 onHttained INFO: Attained pull	
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	
INFV: Httained Loading global config Mau 02 2012 11:52:41 6M budson model Hudson\$5 on0ttained	
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 HM hudson.model.Hudson55 onAttained	
May 03, 2013 11:52:41 AM hudson TcnSlaveAgentListener (init)	
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.	, 1
1. Augson J & G: Nusers Nullaxf N. Augson Nugson .exe start 2013-05-03 11:59:30 520:INRO:ogish ContextHandlewistonned of a in HebannContext(
/file:/C:/llsers/buildsf/.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!