



# Installing, Configuring, and Using the Hub Plugin for TeamCity

Version 1.4.0



This edition of the *Installing, Configuring, and Using the Hub Plugin for TeamCity* refers to version 1.4.0 of the Hub plugin.

This document created or updated on Thursday, April 21, 2016.

**Please send your comments and suggestions to:**

Black Duck Software, Incorporated  
800 District Avenue  
Suite 221  
Burlington, MA 01803 USA.

Copyright © 2016 by **Black Duck Software, Inc.**

All rights reserved. All use of this documentation is subject to the license agreement between Black Duck Software, Inc. and the licensee. No part of the contents of this document may be reproduced or transmitted in any form or by any means without the prior written permission of Black Duck Software, Inc.

Black Duck, Know Your Code, and the Black Duck logo are registered trademarks of Black Duck Software, Inc. in the United States and other jurisdictions. Black Duck Code Center, Black Duck Code Sight, Black Duck Export, Black Duck Hub, Black Duck Protex, and Black Duck Suite are trademarks of Black Duck Software, Inc. All other trademarks or registered trademarks are the sole property of their respective owners.

<b>Chapter 1: Hub TeamCity Plugin Overview</b>	<b>4</b>
1.1 Hub TeamCity Plugin Requirements	4
1.2 Supported Archive Types	5
1.3 Installation Overview	5
1.3.1 Installation Prerequisites	5
1.3.2 Downloading and Installing the Hub TeamCity Plugin	6
1.3.3 Installing the Hub Scanner Command Line Interface	6
1.4 Configuring the Hub TeamCity Plugin	8
1.4.1 Configuring a Build Job	8
1.4.2 Configuring a Proxy	11
1.5 Using the Hub TeamCity Plugin	11
1.6 Troubleshooting the Hub TeamCity Plugin	12
1.7 Best Practices for the Hub TeamCity plugin	12
<b>Chapter 2: Hub TeamCity Plugin Release Notes</b>	<b>13</b>
<b>Chapter 3: Black Duck Support</b>	<b>14</b>
3.1 Training	14

# Chapter 1: Hub TeamCity Plugin Overview

Black Duck Hub is a new risk management application designed to help you manage the logistics of using open source software in your organization.

Black Duck Hub Scanner is the software component scanning functionality in Black Duck Hub that provides an automated way to determine the set of open source software (OSS) components that make up a software application. Hub Scanner is designed to help organizations manage their use of open source binaries by identifying and cataloging OSS components to provide additional metadata such as license, vulnerability, and OSS project health for those components.

TeamCity is an open source continuous integration tool that monitors executions of repeated jobs, such as building a software project or cron jobs. TeamCity focuses on building and testing software projects continuously and monitoring execution of externally run jobs.

As a Hub and TeamCity user, the Hub TeamCity plugin enables you to:

- Run a component scan in a TeamCity job:
  - Scan multiple targets within the job workspace.
  - Define the component scan command line interface (CLI) as a tool.
  - Create projects and releases in Black Duck Hub through the TeamCity job.
  - Associate the scanned code with the project/version in the Hub.
- After a scan is complete, the results are available on the Hub server.

Using the Hub TeamCity Plugin together with Hub Scanner lets you use TeamCity to automatically create Hub projects from your TeamCity projects.

## 1.1 Hub TeamCity Plugin Requirements

### Software Requirements

The installation instructions in this document assume that you have the following installed and configured on your system:

- Access to Black Duck Hub 2.0 server or higher
- TeamCity 7.1 or higher (we recommend the latest LTS release)
- Maven 3
- Java SE 7
- Open Source distribution on Black Duck Hub version 2.3 or higher

**Note:** The Hub Scanner CLI client requires Java Runtime Environment (JRE) version 1.7.0\_40 or later to be installed on the computer where it is run.

**Important:** The Hub Scanner CLI must be installed on the machines running the Hub scan. You must supply the path for the Hub Scanner CLI on the agent running the build, or you must set the environment variable `BD_HUB_SCAN` with the path to the Hub Scanner CLI.

The TeamCity plugin is supported on the same operating systems and browsers as Black Duck Hub.

## Network Requirements

The Hub TeamCity plugin requires internet connectivity. The machine that hosts your TeamCity server must be able to connect to the Hub server.

## 1.2 Supported Archive Types

Hub Scanner can scan archive files as well as a directory of files. The following archive file types can be processed by Hub Scanner:

File types	Supported archive type
Jar files	apk, car, ear, jar, nbm, sar, war
Tar files	tar, bz, bz2, tbz, tbz2, tgz, tar.gz, txz
Zip files	bzip, egg, nupkg, xpi, xz, z, zip

**Note:** If you attempt to scan an individual archive file that is not a supported type, Hub Scanner finds no matches.

**Tip:** For additional information, refer to the Black Duck Hub online documentation.

## 1.3 Installation Overview

**Note:** You can find TeamCity documentation at:  
<https://www.jetbrains.com/teamcity/documentation/>

### 1.3.1 Installation Prerequisites

Before you install the Hub TeamCity Plugin, ensure that:

- Your TeamCity instance is up-to-date and fully patched.
- You know the host name and port number for the Hub server.
- For Hub users, you must have the code scanner role.
- You have connectivity to the internet. The machine that hosts your TeamCity server must be able to connect to the Protex server.

**Note:** Hub users do not perform the installation; this is done by the TeamCity user.

## 1.3.2 Downloading and Installing the Hub TeamCity Plugin

Download the TeamCity plugin from the Hub online Help, then install the plugin using TeamCity.

### \* To download the Hub TeamCity plugin:

1. Navigate to <https://github.com/blackducksoftware/teamcity-hub/releases>.
2. Download and save the .hpi file to a temporary location.

### \* To install the Hub TeamCity plugin:

1. Locate the `hub-teamcity.zip` file.
2. Navigate to the directory `$TEAMCITY_DATA_HOME/plugins`.
3. Delete all old `hub-teamcity.zip` files.
4. Navigate to `$TEAMCITY_DATA_HOME/plugins/.unpacked`.
5. Delete the folder `hub-teamcity`.
6. Move the new `hub-teamcity.zip` file to `$TEAMCITY_DATA_HOME/plugins`.
7. Restart the TeamCity server.

## 1.3.3 Installing the Hub Scanner Command Line Interface

To use Hub Scanner, you must download the Command Line Interface (CLI) client and install it on the computer containing the target that you want to scan, and specifying that location as a scan parameter.

Install the CLI on any computer running a TeamCity agent with jobs using the plugin tasks.

### Downloading the Hub Scanner CLI client

The Hub Scanner command line interface (CLI) client is packaged as a zip file and can be downloaded from within the Hub web application or from the Hub server.

To download the Hub Scanner CLI client:

- Your Hub license must be enabled for component scanning.
- You must have the system administrator role.

**Tip:** The CLI client must be installed by the same user that runs TeamCity or the TeamCity agent on a specific machine. At a minimum, the folders must be writable by that user, so it can write files for auto-updating the CLI when the Hub version upgrades.

### \* To download the CLI client through the Hub user interface:

1. Log in to Hub.



2. Click the user profile icon and select **Tools**.

3. On the **Tools** page, select the **Hub Component Scan CLI** link to download the `scan.cli<version>.zip` file to your local machine.

If you have access to the Hub server, you can download the Component Scan CLI client, because it is packaged with the Hub installer.

**\* To download the Hub Scanner CLI client directly from the Hub server:**

1. Log in to the Hub server as the **root** user.
2. Navigate to the Hub installation directory.

```
cd {InstallationDirectory}/blackduck/hub/downloads/client/scan.cli-  
<version>.zip
```

**Tip:** If Hub is installed in the default installation directory, the file is located in: `/opt/blackduck/hub/downloads/client/scan.cli-<version>.zip`

3. Copy the zip file to the TeamCity agent machine.

### Installing the Hub Scanner CLI client

The Hub Scanner CLI client can be installed on either Linux or Windows. It must be installed on the TeamCity server that you are going to use to run the CLI steps of this process.







**Note:** You cannot use the Hub Scanner CLI client to scan archives on a remote server.

The Hub Scanner CLI client requires Java Runtime Environment (JRE) version 1.7.0\_40 or later to be installed on the computer where it is run.

**\* To install the Hub Scanner CLI client:**

1. Download the Hub Scanner CLI client from Hub in the hamburger menu > **Tools** > **CLI download**.
2. Unzip the Hub Scanner CLI client file.

The directory structure is:

Name	Type
 <b>bin</b>	File folder
 <b>jre</b>	File folder
 <b>lib</b>	File folder
 <b>libexec</b>	File folder
 <b>.dockerignore</b>	DOCKERIGNORE File
 <b>Dockerfile</b>	File

3. For information on running a scan, refer to *Running a Component Scan* in the Hub online help.

**Note:** To run the Hub Scanner CLI client with an HTTPS connection, you must set the `SCAN_CLI_OPTS` property to configure the client to use https before running a scan: `export SCAN_CLI_OPTS=" -Dblackduck.scan.cli.rest.scheme=https"`.

## 1.4 Configuring the Hub TeamCity Plugin

Configure the Hub TeamCity plugin using the following procedure.

### \* To configure the Hub TeamCity plugin:

1. Log into the TeamCity server.
2. Navigate to the **Administration** section.
3. Under **Integrations**, select **Hub**.
4. Enter your credentials for the Hub server:
  - a. Server URL
  - b. User name
  - c. User password
5. Click **Test connection**.
6. If the connection is successful, click **Save**.

The screenshot shows the TeamCity Administration console with the 'Hub' configuration page selected under the 'Integrations' section. The page is divided into two main columns. The left column contains a sidebar with navigation links: Project-related Settings (Projects, Build Time, Disk Usage, Server Health, Audit), User Management (Users, Groups), Integrations (NuGet, Tools, Hub, Code Center), and Server Administration (Global Settings, Authentication, Email Notifier, Jabber Notifier, Agent Cloud, Diagnostics, Backup, Projects Import, Licenses, Clean-up Settings, Usage Statistics). The right column contains the 'Hub Settings' form. It includes fields for 'Server URL' (http://integration-hub.blackducksoftware.com), 'User Name' (sysadmin), and 'User Password' (a masked field). Below these is a 'Proxy Settings' section with fields for 'Proxy Host Name', 'Proxy Port', 'No Proxy Host Names', 'Proxy Username', and 'Proxy Password'. At the bottom of the form are 'Save' and 'Test connection' buttons.

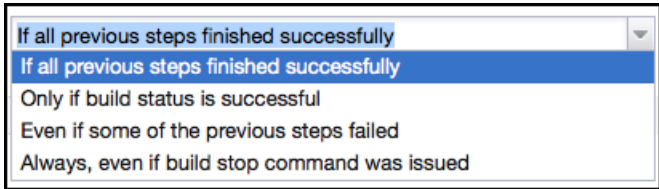
**Note:** In Hub TeamCity if you are running builds on a Windows agent, you cannot configure a project name and version using non-Windows encoding characters; for example, Chinese characters. Therefore, the project name and version cannot contain Unicode characters. This is not an issue in Linux or Mac operating systems.

### 1.4.1 Configuring a Build Job

You can configure a build job (a new project) using the following procedure.



**\* To configure a build job:**

1. To start a new project in TeamCity:
  - a. Navigate to **Administration > Project Related Settings > Projects**.
  - b. Click **Create project**.
  - c. Enter a new project name.
  - d. Click **Create**.
  - e. Click **Create build configuration**.
  - f. Complete the required information.
  - g. Click **VCS settings**.
  - h. Click **Add Build Step**.
  - i. Select Black Duck Hub from the **Runner Type** drop-down list.
2. For an existing project:
  - a. Navigate to **Projects**.
  - b. Select and open a project.
  - c. Open the build for the selected project.
  - d. Select **Edit Configuration Settings**.
  - e. Click **Add Build Step**.
  - f. Select Black Duck Hub from the **Runner Type** drop-down list.
3. **Step name:** *(Optional)* Specify a step name to distinguish this step from other steps. The name specified here displays in the UI.
4. **Execute step:** Click the drop-down box, and select a condition for when the step (Hub Scan) should be run.

The screenshot shows a dropdown menu with five options. The first two options, 'If all previous steps finished successfully' and 'If all previous steps finished successfully', are highlighted in blue. The other three options are 'Only if build status is successful', 'Even if some of the previous steps failed', and 'Always, even if build stop command was issued'.
5. Provide the **Project Name**.

6. Provide the **Project Version**.

**Build Step (2 of 2): Black Duck Hub** |

**Runner type:** Black Duck Hub  
Runner for creating Hub Projects and running Hub component scans

**Step name:**   
Optional, specify to distinguish this build step from other steps.

**Execute step:** If all previous steps finished successfully  
Specify the step execution policy.

**Black Duck Hub**

**Project Name:** PSTestApp  
Name of the Hub Project.

**Version:** 0.1  
Version of the Hub Project.

**Phase:** In Planning  
Phase at which this Version is in.

**Distribution:** External  
Distribution type for this Version.

**CLI Path:**   
Path to the Hub CLI home directory (parent of 'bin' directory). Overrides agent BD\_HUB\_SCAN environment variable

**Hub Scan Memory (in MB's):** 4096  
Must provide at least 4096 MB of memory.

**Scan Targets:**

mvnexbook-examples-1.0/ch-multi-spring

  
Path of the target, within the workspace, to be scanned. One target per line.

Hide advanced options

Save Cancel

**Note:** Leave the **Project Name** and **Version** fields blank if you do not want the scans mapped to a particular version. The resulting scans for the specified scan targets are automatically mapped to the specified project version.

- Phase** and **Distribution:** If you are creating a new version, select the **Phase** and **Distribution** types for this version. The phase and distribution is used to create new versions; the phase and distribution of existing versions is not updated. If the project or version does not exist, it is created during the build.
- CLI Path:** Provide the CLI path to the Hub CLI home directory to be used. If this field is empty, it attempts to use the environment variable `BD_HUB_SCAN` on the agent running the build.
- Hub Scan Memory:** Determine the memory to allocate to the Black Duck scan in megabytes; the default is 4096MB.
- Scan Targets:** type the targets to scan; enter one target per line. If no target is specified, then the entire workspace is scanned.

## 1.4.2 Configuring a Proxy

**Note:** Black Duck does not currently support proxies with authentication.

✳ **To configure the TeamCity plugin to use a proxy:**

1. Log in to TeamCity as administrator.
2. Go to **Administration**.
3. Select **Integrations > Hub**.

The screenshot shows the TeamCity Administration interface. The left sidebar contains a navigation menu with categories: Project-related Settings (Build Time, Disk Usage, Server Health, Audit), User Management (Users, Groups), Integrations (NuGet, Tools, Hub, Code Center), and Server Administration (Global Settings, Authentication, Email Notifier, Jabber Notifier, Agent Cloud, Diagnostics, Backup, Projects Import, Licenses, Clean-up Settings, Usage Statistics). The main content area is titled 'Administration > Hub'. It contains two sections: 'Hub Settings' and 'Proxy Settings'. The 'Hub Settings' section has fields for 'Server URL' (http://integration-hub.blackduckssoftware.com), 'User Name' (sysadmin), and 'User Password' (with a password strength indicator and a note: 'Only enter a password if you want to change the saved password'). The 'Proxy Settings' section has fields for 'Proxy Host Name', 'Proxy Port', 'No Proxy Host Names', 'Proxy Username', and 'Proxy Password'. At the bottom of the settings are 'Save' and 'Test connection' buttons.

4. Under **Proxy Settings**, enter information for the proxy you would like to use:
  - **Proxy Host Name**
  - **Proxy Port**
  - **No Proxy Host Names:** enter a comma-separated list of host names that should not have requests sent through the proxy; for example, *Local/In-Network servers*.
  - **Proxy Username**
  - **Proxy Password**
5. Click **Save**.

**Tip:** If you have a proxy configured for Internet access, but don't need it for accessing your Hub instance, add the hostname to the **No Proxy Host** list.

## 1.5 Using the Hub TeamCity Plugin

✳ **To use the TeamCity plugin to scan a job:**

1. In TeamCity **Projects**, select **Run** for the build configuration you want to run.
2. Click the link next to the build number to go to the build results for that build.

3. To see the output of the build, navigate to the **Build Log**.
4. When the build is complete, the build logs are available in the workspace inside the `HubScansLog` folder.

## 1.6 Troubleshooting the Hub TeamCity Plugin

If an error message is generated that states *During development and testing the following errors were encountered*, use the following solutions:

- If you try to use Java 6 instead of Java 7, instead of getting an *Unsupported major:minor version error* message, the plugin sometimes throws a false *java.lang.OutOfMemoryError: Java heap space* message instead.
- If you get a message that reads *Service Unavailable*, either the Hub server can't be reached, or the request to the server is invalid. Contact your Hub server administrator.
- If you get a message that reads *Precondition failed*, the request to the server is invalid. Verify that your global configuration is correct, and verify that the job configuration is correct. If you are still getting this message after you have checked your configuration, contact Black Duck support.
- If you get a message that reads *Not Found (404) - Not Found*, the request to the server is invalid. Contact Black Duck support.

**Tip:** After major releases of Hub, check for updated versions of your Black Duck plugins. Changes to the APIs, schema, and SDK versions may require updated versions of the integration plugins.

## 1.7 Best Practices for the Hub TeamCity plugin

Setting a variable for the CLI location in each agent configuration is the best way to minimize the effort for the job/task configuration. For more information, refer to [Agent Level Build Parameters](#).

# Chapter 2: Hub TeamCity Plugin Release Notes

## Changes in Release 1.4.0

### New Features

- Failure conditions based on the policy API support are now available:
  - You can configure the failure condition based on policy through the UI.
  - The build fails if there are any counts regarding policy violations.
  - The build logs the policy counts.
  - A version of the Hub that does not support the policy API logs that it is not compatible for the policy API.
  - The build passes even if the policy failure condition is not configured.

### Issues Fixed

- Addressed an issue wherein project scan failure conditions now wait for the Bill of Materials to be updated.
- Addressed an issue wherein duplicate scan targets were not validated.
- Addressed an issue wherein TeamCity builds were failing if the target already existed.
- If an authenticated proxy server has been configured, then all communications from the plugin to Black Duck Hub are now done through the authenticated proxy server.

## Changes in Release 1.3.1

- Addressed an issue with project names containing special characters.

## Chapter 3: Black Duck Support

If you have questions or find issues, contact Black Duck Software.

For the latest in web-based support, access the Black Duck Software Customer Support Web Site:

<https://www.blackducksoftware.com/support/contact-support>

To access a range of informational resources, services and support, as well as access to Black Duck experts, visit the Black Duck Customer Success portal at:

<https://www2.blackducksoftware.com/support/customer-success>

You can also contact Black Duck Support in the following ways:

- **Email:** [support@blackducksoftware.com](mailto:support@blackducksoftware.com)
- **Phone:** +1 781.891.5100, ext. 5
- **Fax:** +1 781.891.5145
- **Standard working hours:** Monday through Friday 8:00 AM to 8:00 PM EST

**Note:** Customers on the **Enhanced Customer Support Plan** are able to contact customer support 24 hours a day, 7 days a week to obtain Tier 1 support.

If you are reporting an issue, please include the following information to help us investigate your issue:

- Name and version of the plugin.
- Black Duck product name and version number.
- Third-party integrated product and version; for example, Artifactory, Eclipse, Jenkins, Maven, and others. For Black Duck Hub, only Jenkins and TeamCity is supported.
- Java version.
- Black Duck KnowledgeBase version, where applicable.
- Operating system and version.
- Source control management system and version.
- If possible, the log files, configuration files, and Project Object Model (POM) XML files.

### 3.1 Training

Black Duck training courses are available for purchase. Learn more at

<https://www.blackducksoftware.com/services/training>.

View the full catalog of our online offerings: <https://www.blackducksoftware.com/academy-catalog>.

When you are ready to learn, you can log in or sign up for an account:

<https://www.blackducksoftware.com/academy>.

## Services

If you would like someone to perform Black Duck Software tasks for you, please contact the Black Duck Services group. They offer a full range of services, from planning, to implementation, to analysis. They also offer a variety of training options on all Black Duck products. Refer to <https://www.blackducksoftware.com/services/> for more information.