

# Build Pipeline Plugin

## Summary

This plugin provides a *Build Pipeline View* of upstream and downstream connected jobs that typically form a build pipeline. In addition, it offers the ability to define manual triggers for jobs that require intervention prior to execution, e.g. an approval process outside of Jenkins.

### Plugin Information

View Build Pipeline [on the plugin site](#) for more information.

## Release Notes

### 1.5.8

-  Address boundary case of [JENKINS-23532](#) where relative paths would not retrigger



### 1.5.7.1

- (-) [JENKINS-45137](#) Fix stack trace for pipelines created / edited in v 1.5.6


### 1.5.7

- (-) [JENKINS-23532](#) Manual trigger execution causes TriggerException
- (-) [JENKINS-44324](#) NullPointerException upgrading from very old versions of plugin
- (-) Fix issue with dashboard view not loading
- (+) Added support for extensible BuildCard



### 1.5.6

-  [Issues #34722 \(Pull #88\)](#) Performance fix when determining view permissions
-  [Issues #14591 \(Pull #96 and Pull #106\)](#) Add the ability to choose which parameters build will be displayed



### 1.5.5

-  Eaten by [INFRA-588](#)


### 1.5.4

-  [Pull #105](#) Keep git-plugin RevisionParameterAction on rerun of a build
-  [Issues #31088](#) show displayName by default


### 1.5.3.1

-  [Issue #33935](#) Fix re-running a build - broken in Jenkins > 1.653, LTS > 1.651.1
-  [Issue #34722](#) Performance fix - limit the number of downstream projects iterated over




### 1.5.2

-  [Issue #33591](#) Fix manual trigger breaking in Jenkins >1.653


### 1.5.1

-  [Issue #31746](#) Fix issues in layout, UI updates


### 1.4.9

-  ([issue #30801](#)) Re-triggering a failed build copies the Actions from previous builds
-  ([issue #28068](#)) Build Pipeline Dashboard View destroys layout of Jenkins
-  ([issue #29477](#)) View bad for Build Pipeline Plugin




### 1.4.8


-  ([issue #28180](#)) Build Pipeline background layout does not extend full width of pipeline

### 1.4.7




-  ([JENKINS-25666](#)) Fixed left-side indentation for new Jenkins versions

### 1.4.6

-  ([JENKINS-20499](#)) Null cause breaks Cause entry and job
-  ([JENKINS-22665](#)) ([JENKINS-19755](#)) Don't store whole user object for cause
-  Fixed UI tests

-  Removed test libs from final package

1.4.5

-  Support cloudbees-folder-plugin ([JENKINS-14565](#)) ([JENKINS-20841](#))
-  Start build with parameters for parametrized builds ([JENKINS-25427](#)) ([JENKINS-19121](#))
-  Clicking on "console" icon doesn't work ([JENKINS-25430](#))

1.4.4

1.3.3

1.3.1

1.3.0 - Also see the [roadmap](#) for details.

1.2.4 - Also see the [roadmap](#) for details.

1.2.2

1.2.1

1.2

1.1.2

1.1.1

1.0.0

## Overview

Continuous Integration has become a widely adopted practice in modern software development. Jenkins & Hudson are great tools for supporting Continuous Integration.

**Taking it to the next level:** Continuous integration can become the centerpiece of your [deployment pipeline](#), orchestrating the promotion of a version of software through quality gates and into production. By extending the concepts of CI you can create a chain of jobs each one subjecting your build to quality assurance steps. These QA steps may be a combination of manual and automated steps. Once a build has passed all these, it can be automatically deployed into production.

In order to better support this process, we have developed the Build Pipeline Plugin. This gives the ability to form a chain of jobs based on their upstream\downstream dependencies. Downstream jobs may, as per the default behaviours, be triggered automatically ,or by a suitable authorised user manually triggering it.

You can also see a history of pipelines in a view, the [current](#) status and where [each version](#) got to in the chain based on its revision number in VCS.

## Screenshots

### The Pipeline View

The screenshot shows the Jenkins interface for a pipeline named 'Build Pipeline: My pipeline'. At the top, there are navigation icons for Run, History, Configure, Add Step, Delete, and Manage. Below this, two pipeline versions are displayed:

- Version 8:** Pipeline version 8, No parameters. Steps include Test (Jun 26, 2012 5:30:48 PM, 10 sec), Release (Jun 26, 2012 5:31:03 PM, 12 sec), Deploy to Test (Jun 26, 2012 5:31:46 PM, 6 sec), Generate docs (Jun 26, 2012 5:31:20 PM, 9.1 sec), Deploy to Pre-Prod, and Deploy to Prod.
- Version 7:** Pipeline version 7, No parameters. Steps include Test (Jun 26, 2012 5:26:25 PM, 10 sec), Release (Jun 26, 2012 5:26:40 PM, 12 sec), Deploy to Test (Jun 26, 2012 5:27:13 PM, 13 sec), Generate docs (Jun 26, 2012 5:26:57 PM, 9.1 sec), Deploy to Pre-Prod (Jun 26, 2012 5:27:31 PM, 10 sec), and Deploy to Prod (Jun 26, 2012 5:27:46 PM, 15 sec).

At the bottom of the page, it says 'Page generated: 26-Jun-2012 17:31:39 Jenkins ver. 1.470'.

## Configuration

### View Configuration

1. Install the plugin using the Hudson\Jenkins Plugin Manager and restart.
2. Create a view of the new type *Build Pipeline View*. You will then be redirected directly to the configuration page.
3. The table below outlines what each interesting parameter controls:

<b>Name</b>	The name of the Build Pipeline View
<b>Description</b>	This message will be displayed on the view page. Useful for describing what this view is about, or linking to relevant resources. Can contain HTML tags.
<b>Build Pipeline View Title</b>	Gives a title to the page that displays the view
<b>Select Initial Job</b>	This is the first job in the build pipeline. It will traverse through the downstream jobs to build up the entire build pipeline. Select from a drop-down list of jobs.
<b>No of Displayed Builds</b>	The number of historical builds to be displayed on a page.
<b>Restrict triggers to most recent successful builds</b>	Select this option to restrict the display of a Trigger button to only the most recent successful build pipelines. <i>Yes:</i> Only the most recent successful builds displayed on the view will have a manual trigger button for the next build in the pipeline. <i>No:</i> All successful builds displayed on the view will have a manual trigger button for the next build in the pipeline.
<b>Always allow manual trigger on pipeline steps</b>	Select this option if you want to manually execute or re-execute any step of the pipeline at any time.

Show pipeline parameters

Select this option if you want to display the parameters used to run the first job in the pipeline.

The screenshot shows the Jenkins Job Configuration page for a pipeline job. The page is titled "Jenkins" and has a search bar and "log in | sign up" links in the top right. On the left, there are navigation links: "New Job", "People", "Build History", "Edit View", "Delete View", and "Manage Jenkins". Below these are two status sections: "Build Queue" (No builds in the queue) and "Build Executor Status" (a table with 2 idle executors, one named "sterling-ci" which is offline). The main configuration area has a "Name" field with "Build Pipeline", a "Description" field, and a "Preview" section. The "Preview" section includes checkboxes for "Filter build queue" and "Filter build executors", a "Build Pipeline View Title" field with "My build pipeline", a "Select Initial Job" dropdown with "Test", a "No Of Displayed Builds" dropdown with "3", and three radio button options for "Restrict trigger to the most recent build", "Always allow manual trigger on pipeline steps", and "Show pipeline parameters", all set to "No". There is also a "Refresh frequency (in seconds)" field with "3". An "OK" button is at the bottom left. The footer contains "Help us localize this page" and "Page generated: 27-Jun-2012 10:46:52 Jenkins ver. 1.463".

## Job Configuration

1. Navigate to the Job configuration page.
2. Scroll down to the *Post-build Actions* section.
  - a. For an **Automated** downstream build step:  
To add a build step that will trigger automatically upon the successful completion of the previous one:
    - i. Select the *Build other projects* check-box
    - ii. Enter the name(s) of the downstream projects in the *Projects to build* field. (n.b. Multiple projects can be specified by using comma, like "abc, def".)
  - b. For a **Manually Triggered** downstream build step:  
To add a build step that will wait for a manual trigger:
    - i. Select the *Build Pipeline Plugin -> Manually Execute Downstream Project* check-box
    - ii. Enter the name(s) of the downstream projects in the *Downstream Project Names* field. (n.b. Multiple projects can be specified by using comma, like "abc, def".)
3. Click *Save*



### Automatic & Manual downstream build steps

The Build Pipeline Plugin handles the creation of multiple automatic and/or manually triggered downstream build steps on the same project.

**Post-build Actions**

- Record fingerprints of files to track usage ?
- Aggregate downstream test results ?
- Archive the artifacts ?
- Build other projects ?
- Projects to build
- Trigger even if the build is unstable
- Publish JUnit test result report ?
- Publish Javadoc
- E-mail Notification ?
- Build Pipeline Plugin -> Manually Execute Downstream Project ?
- Downstream Project Names

## Upgrading from Release 1.0.0

When upgrading from 1.0.0 to 1.1.x some of the previous view and job configuration fields have been removed. You may notice some errors of the following errors appearing in the Hudson/Jenkins log.

```
WARNING: Skipping a non-existent field downstreamProjectName
com.thoughtworks.xstream.converters.reflection.NonExistentFieldException: No such field
au.com.centrumsystems.hudson.plugin.buildpipeline.trigger.BuildPipelineTrigger.downstreamProjectName
```

This is because the configuration files refer to old fields that may no longer exist. In order to correct these issues go to the Job configuration page, confirm that all of the details are correct and click on the *Save* button.

## More on Pipelines

The canonical reference for pipelines is the book [Continuous Delivery](#).

Chapter 5 of the book, which describes how deployment pipelines work, is available for free [here](#).