

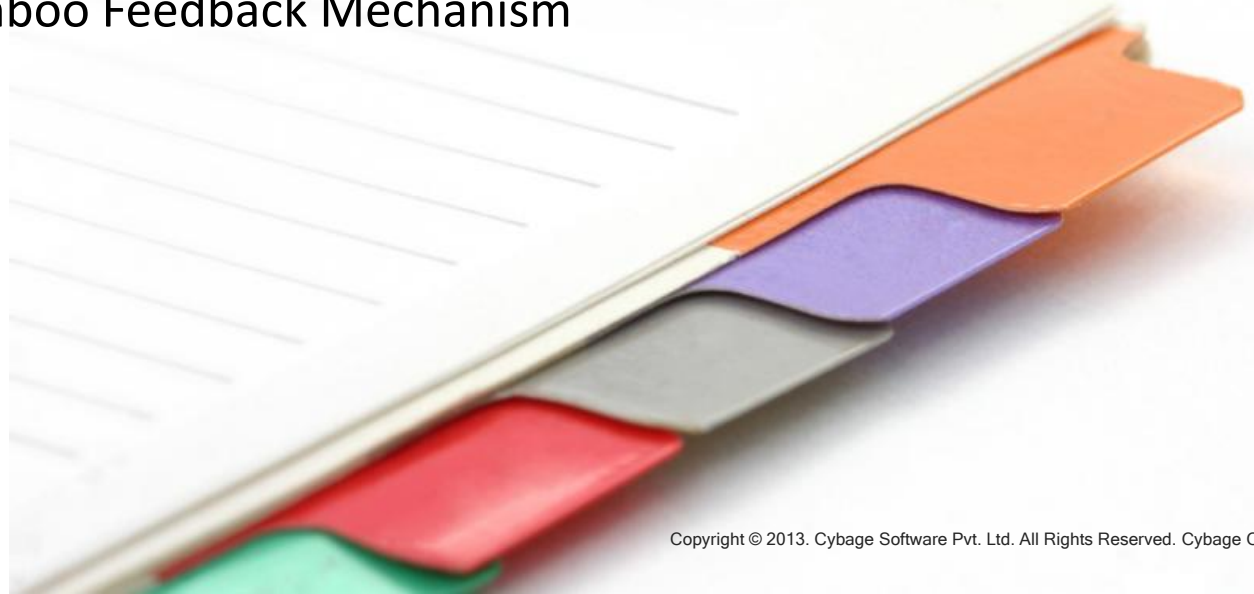
Atlassian Bamboo

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Agenda

- Overview on Atlassian Bamboo
- Bamboo Workflow
- Benefits of Bamboo
- How Bamboo Works
- Detailed Bamboo Architecture
- Bamboo Agents
- Bamboo Feedback Mechanism



Overview on Atlassian Bamboo

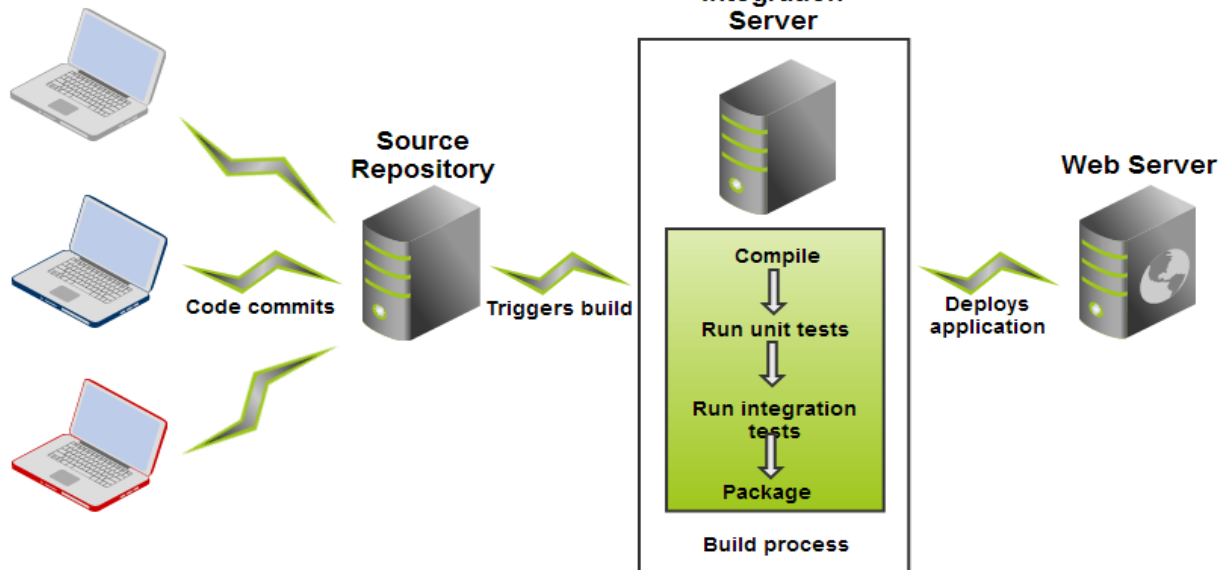
Bamboo as an CI Server

Bamboo is a continuous integration (CI) server that can be used to automate

- the release management for a software application
- creating a continuous delivery pipeline

Continuous Integration

Developers



Bamboo Workflow

Bamboo

- automated building and testing of software source-code
- updates on successful/failed builds
- reporting tools for statistical analysis

Build Workflow



Benefits of Bamboo

- builds are triggered automatically as soon as a developer commits code (continuous integration).
- you can optimize build performance through parallelism.
- you can deploy continuously, for example to user acceptance testing (UAT).
- you can implement release management.

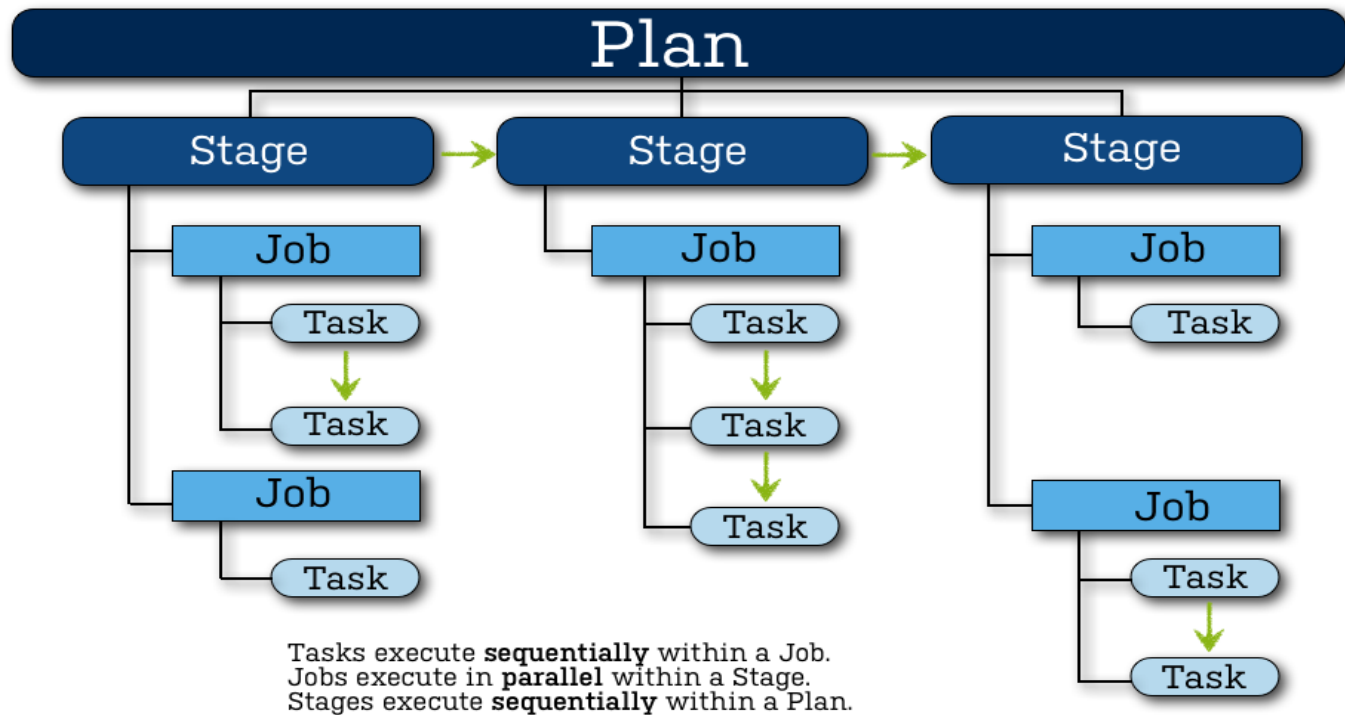
How does Bamboo do this?

- Bamboo first gets your source from a source repository
- Then bamboo starts the build - that can be done by calling something like Maven /ANT to build.
- Artifacts can be shared across the build plans.
- Build reports can be configured with bamboo

What does Bamboo need?

- To use Bamboo, you will need to already have the following set up:
- a code repository that contains the complete source code for the project.
- build scripts
- test suites

Bamboo Architecture



Bamboo Project

Project

- Has one, or more, [plans](#).
- Provides [reporting](#) (using the wallboard, for example) across all plans in the project.
- Provides links to other applications.

Project

Project

New Project ▼

Select or add a project that the new plan will be created in.

Project name *

TestProject

Project key *

TP

This is the unique project key to identify a project. The key must contain only uppercase alphanumeric characters. e.g. "ITA".

Bamboo Plans

- A plan defines everything about your continuous integration build process in Bamboo.
 - ✓ Groups jobs into multiple stages.
 - ✓ Processes stages that are run sequentially.
 - ✓ Specifies the default repository
 - ✓ Specifies how the build is triggered
 - ✓ Specifies notifications of build results

Plan details

Plan name*

Plan key*

This is the key for the plan which must be unique within a project. In conjunction with the project key, it is used to identify a build in urls, trigger scripts and api calls. The key must contain only uppercase alphanumeric characters. e.g. "CORE"

Description

Bamboo Plans – Config Cont ..

Link repository to new build plan

Repository host* ☐ Previously linked repository
☒ Link new repository



Display name*

Bitbucket details

Username*

The Bitbucket user required to access the repositories.

Password

The password required by the Bitbucket username.

Repository

Select the repository you want to use for your Plan.

Repository access ☒ Allow all users to reuse the configuration of this repository
☐ Only you are allowed to reuse the configuration of this repository

Bamboo Plans – Config Cont ..

Trigger

[How build triggers work](#)

Trigger type *

Repository triggers the build when ▼

How should Bamboo trigger builds for this plan? (dependent builds are automatically triggered)

Trigger IP
addresses

Bamboo ensures that triggers originate from IP addresses of the repository server(s). You can authorise additional IP addresses here, separated by a comma.

Plan Configuration

▼ Stages & jobs 1

Default Stage

≡ Default Job

► Branches 0

Plan details

Stages

Repositories

Triggers

Branches

Dependencies

Permissions

Notifications

Variables

Miscellaneous

Audit log

Plan details

You can update the names and description of the current project and plan.

Project name *

Angry Nerds

Plan name *

Angry Nerds

Description

It's the master

☒ Plan enabled

Save

Cancel

Bamboo Stages

- Stages group jobs to individual steps within a plan's build process.
Ex : compilation ,test, deployment, etc.
- ✓ Processes its jobs in parallel, on multiple agents (where available).
- ✓ Must successfully complete all its jobs before the next stage in the plan can be processed.
- ✓ May produce artifacts that can be made available for use by a subsequent stage.

Bamboo Jobs

- A Bamboo job is a single build unit within a plan
 - ✓ Processes tasks that are run sequentially on the same agent
 - ✓ Controls the order in which tasks are performed
 - ✓ Collects the requirements of individual tasks in the job, so that these requirements can be matched with agent capabilities
 - ✓ Defines the artifacts that the build will produce
 - ✓ Can only use artifacts produced in a previous stage

Bamboo Tasks

- A Bamboo task is a small discrete unit of work
 - ✓ Source code checkout
 - ✓ Running a script
 - ✓ Parsing test result
 - ✓ Substitute version numbers
- Is run sequentially within a job
- Has specific requirements

Maven 3.x Configuration

Task Description

Executable

Maven 3

[Add New Executable](#)

Goal
clean test

The goal you want to execute. You can also define system properties such as `-Djava.awt.headless=true`.

☐ **Use Maven Return Code**
When determining build success, Bamboo checks Maven return code and searches the log for "BUILD SUCCESS".By checking this option, you will configure Bamboo to skip log parsing. This may fail on some Maven versions/operating systems.

Bamboo Tasks – Cont...

Where should Bamboo look for the test result files?

☒ The build will produce test results.

If checked, the build will fail if no tests are found. Test output must be in JUnit XML format.

Test Results Directory

☒ Look in the standard test results directory.

☐ Specify custom results directories

Where should Bamboo look for the test result files?

Bamboo Agents

- A Bamboo agent is a service that can run job builds
 - 2 types:
 - ✓ local agents run as part of the Bamboo server
 - ✓ remote agents run on computers, other than the Bamboo server
- Defined set of capabilities
- Runs builds for jobs whose requirements match the agent's capabilities.

Bamboo Feedback

- Getting immediate feedback about build results is the essence of continuous integration.
- **Notifications**

Bamboo can send notifications to your team about the success or failure of their builds in a number of ways:

 - ✓ The Wallboard
 - ✓ Email
 - ✓ Instant messaging
 - ✓ RSS feeds
- **Reports**
- Bamboo provides various reports about the build activity of your development team:
 - ✓ Summary statistics for all users
 - ✓ Build results for an author
 - ✓ Comparison charts for authors
 - ✓ Comparison charts for plans
 - ✓ Clover code-coverage for a job
 - ✓ Clover code-coverage for a build

Bibliography, Important Links

- <http://martinfowler.com/articles/continuousIntegration.html> - the main article about CI from Martin Fowler
- <http://www.infoq.com/news/2009/03/Continuous-Deployment> - Beyond Continuous Integration: Continuous Deployment
- <http://radar.oreilly.com/2009/03/continuous-deployment-5-eas.html> - Continuous Deployment in 5 easy steps
- http://www.proudlyserving.com/archives/2007/10/fear_of_a_broke.html - 'fear of the broken build' effect
- <https://confluence.atlassian.com/display/BAMBOO/Understanding+the+Bamboo+CI+Server> –Bamboo CI server

Any Questions?





Thank You!