C++ & software engineering

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FI MUNI - Brno
Grab the source code

https://github.com/ysoftdevs/cpp-examples
We should be taught not to wait for inspiration to start a thing. Action always generates inspiration.

- Frank Tibolt
Write a failing unit test

Make the test pass

Refactor
Understand the problem

Broad-Brush Design (Architecture)

Automate:
- build
- deployment
- end-to-end tests

Write a failing unit test
Write a failing acceptance test
Refactor
Make the test pass
Know your tool

Developer

....or

Engineer
Embedded systems developer

Proprietary Embedded Technologies

C#, CSS 3.0, ECMAScript 6, Java 1.4, C++

TDD, BDD

Git

gradle, grunt

Nuget, Sonatype Nexus, Npm, Private Bower Registry

Web Services - SOAP, REST
Is it live yet?

● Important is communication before and during development
  ○ Focus groups, Elaboration helps before development
  ○ Code review and pull requests helps during development

● Important are results
  ○ Technology dept
  ○ Maintenance cost
  ○ Role of customer (real customer, product manager, architect), technical lead, senior developer
Conway’s law

organizations which design systems ... are constrained to produce designs which are copies of the communication structures of these organizations

Martin Fawler - Microservices (2015)

https://youtu.be/2yko4TbC8cl
Antipattern

http://martinfowler.com/bliki/AntiPattern.html
Chaos Monkey
Podcasts

Channel9 - https://channel9.msdn.com/
Hanselminutes - http://hanselminutes.com/
CppCast - http://cppcast.com/
Devminutes - http://devminutes.cz/
Conemu Maximus 5

Powerful terminal for Windows
use with PowerShell, Python, Ruby…

https://code.google.com/p/conemu-maximus5/
Yum/Apt-like installation of Win packages

https://chocolatey.org
NuGet - http://www.nuget.org
Cppcheck
Continuous integration
Hit for Windows users: Do not install Jenkins into path with special characters and blank space. E.g: Wrong: C:\Program Files (x86)\Jenkins. Correct: Use C:\projects\jenkins
## Dashboard view

<table>
<thead>
<tr>
<th>Project</th>
<th>Plan</th>
<th>Build</th>
<th>Completed</th>
<th>Tests</th>
<th>Reason</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aura</td>
<td>Check resources</td>
<td>🟢 #9</td>
<td>4 days ago</td>
<td>No tests found</td>
<td>Changes by uhliarik</td>
</tr>
<tr>
<td></td>
<td>Documentation</td>
<td>🟢 #26</td>
<td>16 hours ago</td>
<td>No tests found</td>
<td>Scheduled</td>
</tr>
<tr>
<td>Cronos</td>
<td>Check resources</td>
<td>🟢 #24</td>
<td>21 minutes ago</td>
<td>No tests found</td>
<td>Changes by dolejsi</td>
</tr>
<tr>
<td></td>
<td>Documentation</td>
<td>🟢 #14</td>
<td>14 hours ago</td>
<td>No tests found</td>
<td>Scheduled</td>
</tr>
<tr>
<td></td>
<td>SafeQ</td>
<td>🟢 #140</td>
<td>1 week ago</td>
<td>No tests found</td>
<td>Changes by dolejsi</td>
</tr>
</tbody>
</table>
Plan summary

Current activity
No builds are currently running.

Recent history

Plan statistics

23 builds
95% successful
Hierarchy

Plan

Stage

Job

Task
Stage

Each stage within a plan represents a step within your build process. A stage may contain one or more jobs which Bamboo can execute in parallel. For example, you might have a stage for compilation jobs, followed by one or more stages for various testing jobs, followed by a stage for deployment jobs.

No equivalent in our Jenkins
Agent capabilities

<table>
<thead>
<tr>
<th>JDK label</th>
<th>Java home</th>
<th>Operations</th>
</tr>
</thead>
<tbody>
<tr>
<td>JDK</td>
<td>D:\Program Files (x86)\Java\jdk1.7.0_51</td>
<td>View</td>
</tr>
<tr>
<td>JDK 1.7</td>
<td>D:\Program Files (x86)\Java\jdk1.7.0_51</td>
<td>View</td>
</tr>
<tr>
<td>JDK 1.7.0_51</td>
<td>D:\Program Files (x86)\Java\jdk1.7.0_51</td>
<td>View</td>
</tr>
<tr>
<td>JDK 1.7.0_51 (JRE)</td>
<td>D:\Program Files\Java\jre7</td>
<td>View</td>
</tr>
</tbody>
</table>

**Git**

The path to the Git executable (e.g. 'C:\Program Files (x86)\Git\git.exe' or '/usr/local/git/bin/git')

<table>
<thead>
<tr>
<th>Executable</th>
<th>Path</th>
<th>Operations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Git</td>
<td>C:\Program Files (x86)\Git\cmd\git.exe</td>
<td>View</td>
</tr>
</tbody>
</table>
Focus

One agent - One job

No parallel executions on one Agent
Add-ons

Atlassian Marketplace for Bamboo

Discover powerful add-ons compatible with your Bamboo version via the Atlassian Marketplace. Manage add-ons.

Chuck Norris

Search results

All categories

Paid or free

Chuck Norris for Bamboo

Michael Rüegg • Vendor supported

BUILD MANAGEMENT

38 downloads

Free

This is the well-known Chuck Norris plug-in for Atlassian Bamboo. It displays a picture and a random programmer joke of Chuck Norris on each build page and on the Bamboo wallboard.
Build result summary

Details

Completed 20 May 2014, 3:10:47 PM – 3 minutes ago

Duration 20 minutes

Labels None

Show more

“Chuck Norris can't test for equality because he has no equal.”
Artifacts to Nexus

Do not store binaries in Git/SVN!

exe, fonts, big files, jars...
IDE & Text editors
```c++
#include <iostream>
using namespace std;

int main() {
    // your code goes here
    cout << "Hello" << endl;
    return 0;
}
```
Cloud9 IDE
Your code anywhere, anytime

https://c9.io
Sublime Text
Older talks

http://georgik.sinusgear.com/prednasky/
YSofters

Twitter: @ysoftdevs
GitHub: github.com/ysoftdevs
Blog: www.ysofters.com
Technology Hour: www.meetup.com/ysoft-th