

What is BigJob?

- BigJob is general purpose Pilot-Job framework
- It allows the submission of computational jobs to distributed systems without having to go through some form of resource assignment\
- This decoupling allows for much more dynamic execution, which can in turn lead to increased speed and better utilization of resources

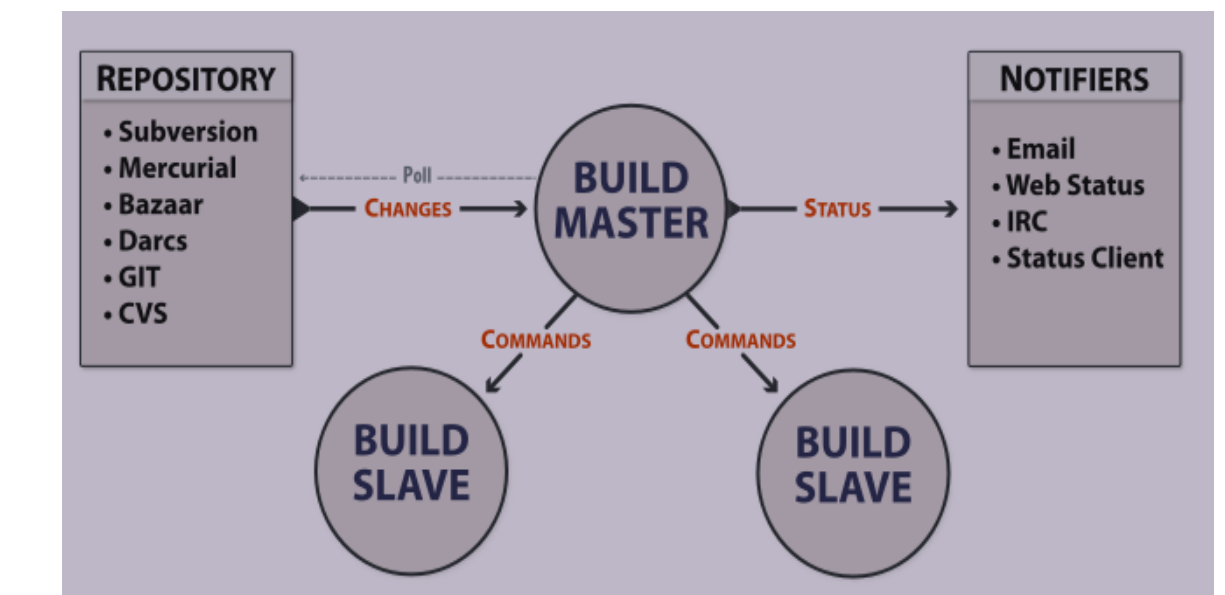
Why is automated testing needed?

- BigJob is not only widely used, but still growing as a pilot-job framework
- Automated testing allows for new additions to BigJob's source to be tested immediately after being pushed
- This allows for the fastest response if any errors are encountered in the automated build

What options are available?

- Automated testing as a whole is usually implemented on a per-project basis, but in recent years open source solutions have become available
- BuildBot and Jenkins are two newer and popular open source continuous testing resources that are available
- We decided on BuildBot

BuildBot Operation



- BuildBot constantly watches the GitHub master branch of BigJob for any changes to the source
- Once a change is recognized, BuildBot clones the branch and executes tests designed by BigJob developers on many different infrastructures including the localhost

Example Pages for Buildbot

The screenshot shows the Buildbot web interface for the Bliss project. On the left, there's a 'Waterfall' view showing a vertical stack of build logs with a color-coded progress bar. On the right, there's a 'Grid' view showing a table of build results with columns for time, status, and build name.

time (PST)	status	build
12:37:29	successful	Bundle installer
12:37:29	failed	Config
12:37:29	successful	Bundle installer
12:27:24	skipped	SmokeTest
10:15:47	skipped	Bundle installer
10:12:23	skipped	SmokeTest
07:27:07	skipped	Bundle installer
07:24:30	skipped	SmokeTest
07:22:04	skipped	Bundle installer
07:22:35	skipped	SmokeTest
07:22:09	skipped	Bundle installer
06:54:38	skipped	SmokeTest
06:54:21	skipped	Bundle installer
06:53:54	skipped	SmokeTest
06:53:32	skipped	Bundle installer
06:45:26	skipped	SmokeTest
06:44:56	skipped	Bundle installer
06:44:11	skipped	SmokeTest
06:14:29	skipped	Bundle installer
06:10:44	skipped	SmokeTest

Supported Adaptors

Adaptors allow BigJob to perform execution in uniform ways across varying architectures/infrastructures

- Fork() for localhost
- SSH for remote
- SGE(+SSH/GSISSH)
- Torque/PBS
- SLURM/SSH

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Citations

- <https://github.com/saga-project>
- <https://github.com/saga-project/BigJob>
- <https://github.com/saga-project/saga-python>