



LibreOffice

The Document Foundation



Improvements to LibreOffice CI (Jenkins)

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Agenda

- What is CI?
- What do we use in the LibreOffice project?
- What are the problems with it?
- What has been done to improve the situation?
- Future improvements
- Q & A

What is CI?



What is CI?

- CI = Continuous Integration
- everyone pushes frequently to same branch
- aims to prevent integration problems
- now more often refers to the tooling



Why is it a good thing?

- tests all platforms, not only those the developer has access to
- standard build environment
- nobody likes build-breakers on a branch

What do we use in the LibreOffice project?



Gerrit

- Patch review system
- webinterface
- commandline
- collects review results



Jenkins

- receives changes from gerrit
- orchestrates builds
- sends results to gerrit



Tinderbox

- do build the branch
- partially part of jenkins, partially independent
- some do provide installation sets (daily/nightly builds)


**What are the
problems with it?**



Problems

- build duration differs
- number of build agents is limited
- commits are not evenly distributed throughout the day
- random failures

 tb72	Windows Server 2012 R2 (amd64)
 tb68-bytemark	Windows Server 2012 R2 (amd64)
 tb73	Windows Server 2012 R2 (amd64)
 tb77	Windows Server 2012 R2 (amd64)
 tb78	Windows Server 2012 R2 (amd64)
 tb69	Mac OS X (x86_64)
 tb57	Mac OS X (x86_64)
 tb58	Mac OS X (x86_64)
 tb66	Mac OS X (x86_64)
 tb81	Mac OS X (x86_64)
 tb80	Mac OS X (x86_64)

	tb75-lilith	Linux (amd64)
	tb76-maggie	Linux (amd64)
	vm139	Linux (amd64)
	gandalf	Linux (amd64)
	tb79-pollux	Linux (amd64)
	tb31	Linux (amd64)
	master	Linux (amd64)
	vm138	Linux (amd64)
	tb82	
	tb59	



Problems

- build duration differs
- number of build agents is limited
- commits are not evenly distributed throughout the day
- random failures

**What has been done to
improve the situation?**



Touchstone builds

- don't build on slow operating system when the build already failed
- artificially introduces delays
- builds are more likely to fail on the slow systems
- abandoned later



"no activity" timeout

- build assumed to be stuck after x seconds with no additional buildlog output
- previously absolute buildtime



Switch to Multijob

- previously Matrix Project
- allows to kill other jobs if one job fails
- allows to resume
- easier access to buildlog



Triggered by Gerrit: <https://gerrit.libreoffice.org/50594>



Revision: 4766e4b8cc7ead125002e0b53b0b1c56c22a2c03

- refs/changes/94/50594/1

Configurations

 [linux_clang_dbgutil_64](#)

 [linux_gcc_release_64](#)



[macosx_clang_dbgutil](#)



[windows_msc_dbgutil_32](#)





Switch to Multijob

- previously Matrix Project
- allows to kill other jobs if one job fails
- allows to resume
- easier access to buildlog



Triggered by Gerrit: <https://gerrit.libreoffice.org/59099>

S	R	Job	Build #	Duration	Console
		<i>buildstep</i>			
		gerrit_linux_gcc_release	build #12680	(17 min)	
		gerrit_windows	build #13526	(1 hr 10 min)	
		gerrit_mac	build #12913	(30 min)	
		gerrit_linux_clang_dbgutil	build #12874	(29 min)	



Switch to Multijob

- previously Matrix Project
- allows to kill other jobs if one job fails
- allows to resume
- easier access to buildlog

 Back to Project

 **Status**

 Changes

 Console Output

 Edit Build Information

 Delete Build

 Polling Log

 Retrigger

 Parameters

 Environment Variables

 Resume build

 Failure Cause Management

 Previous Build

 Next Build



Priorities for nodes and branches

- prefer faster machines over the slower ones
- prefer release-branches over master



Build Failure Analyzer

- just getting “your build failed” is not very helpful
- BFA matches regular expression in buildlog
- ootb only works for individual jobs, adding result to multijob required groovy plumbing



Identified problems

VS compiler error

Visual studio complained about error C2027: use of undefined type

'com::sun::star::lang::XSingleServiceFactory' in file

C:/cygwin/home/tdf/lode/jenkins/workspace/gerrit_windows@2/fpicker/source/win32/filepicker/FPentry.cxx(75)

[Indication 1](#)



Automatic retry

- retries the build on known bot failures
- when an agent loses network
- make stdout error
- mspdbsrv got killed

S	R	Job	Build #	Duration	Console
<i>buildstep</i>					
		gerrit_linux_clang_dbgutil	build #13935	(53 min)	
		gerrit_linux_gcc_release	build #13720	(43 min)	
		gerrit_mac	build #13998	(49 min)	
		gerrit_windows	build #14708	(1 hr 21 min)	
		gerrit_windows	build #14726	(1 hr 24 min)	



build two jobs on a single machine

- start and end of a build are not using all threads
- jenkins's default of using @ in pathname (workdir@2) caused some issues
- avoid multiple workdirs when using ccache



Killing of leftovers

- signal handler in buildscript
- kills all processes in the process group
- can backfire



change default view

- thousands of builds made it slow
- full data moved to different tab

Future improvements



fast-failure-throttle

- automatic resume won't work
- bot needs to be taken offline



unclog queue in case of series

- when a series of patches is committed, all get queued
- stop processing of remaining series if the parent failed
- assign low priority to series to give other patches a chance



search for builds with failure x

- as workaround search in gerrit for jenkins's comment



integrate with SSO

- so everyone with commit privileges can resume



UI tweaks

- resume build only works in sidebar

Questions?



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