

To test – continuously – or not to code

Intégration Continue :

Retour d'expérience sur la
mise en place d'un dashboard CDash et

ouverture sur d'autres outils

Claire Mouton - CREATIS, Lyon, France

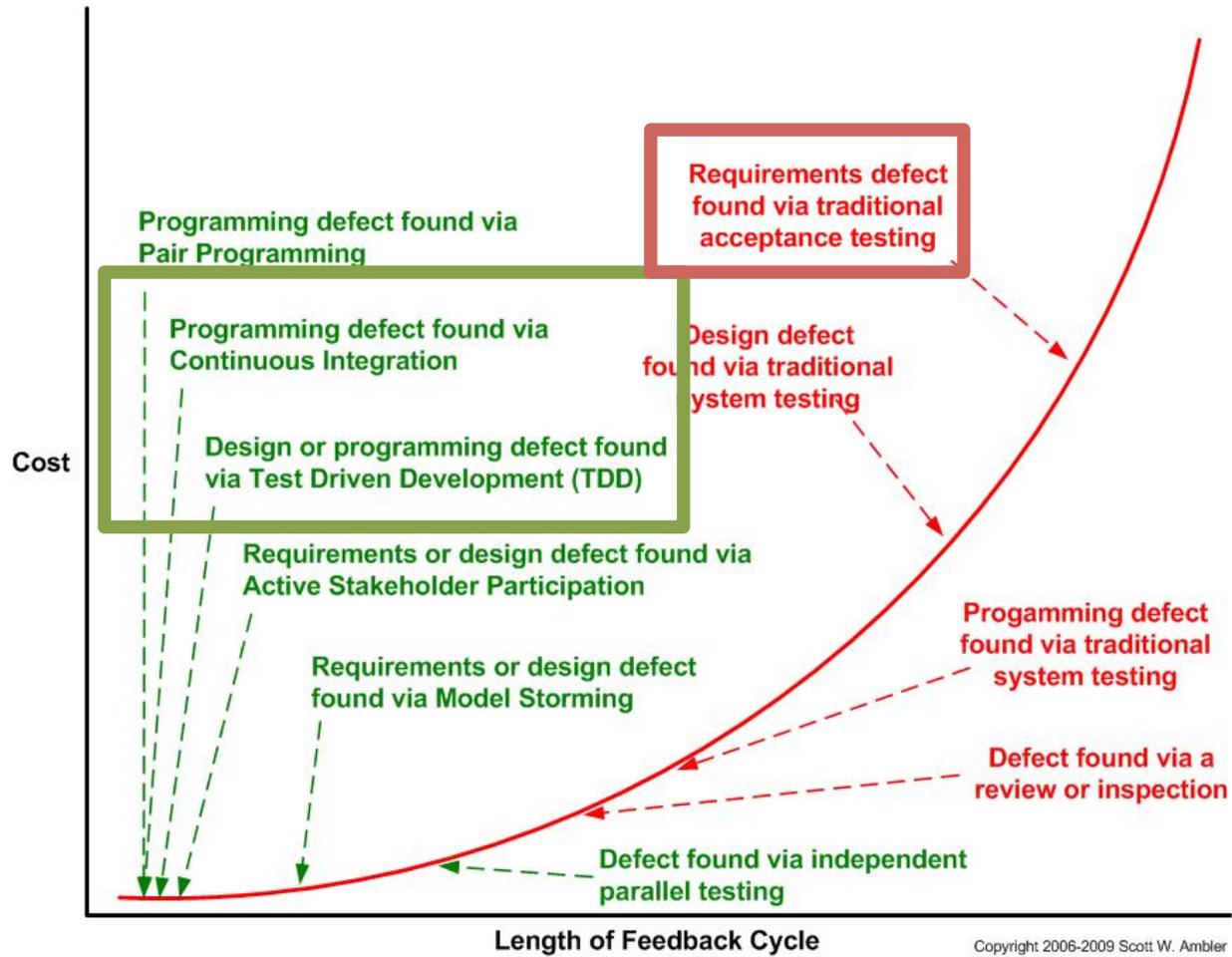
claire.mouton@creatis.insa-lyon.fr

Plénière Aramis 13 avril 2017

Pourquoi?

Pourquoi?

Time is money !

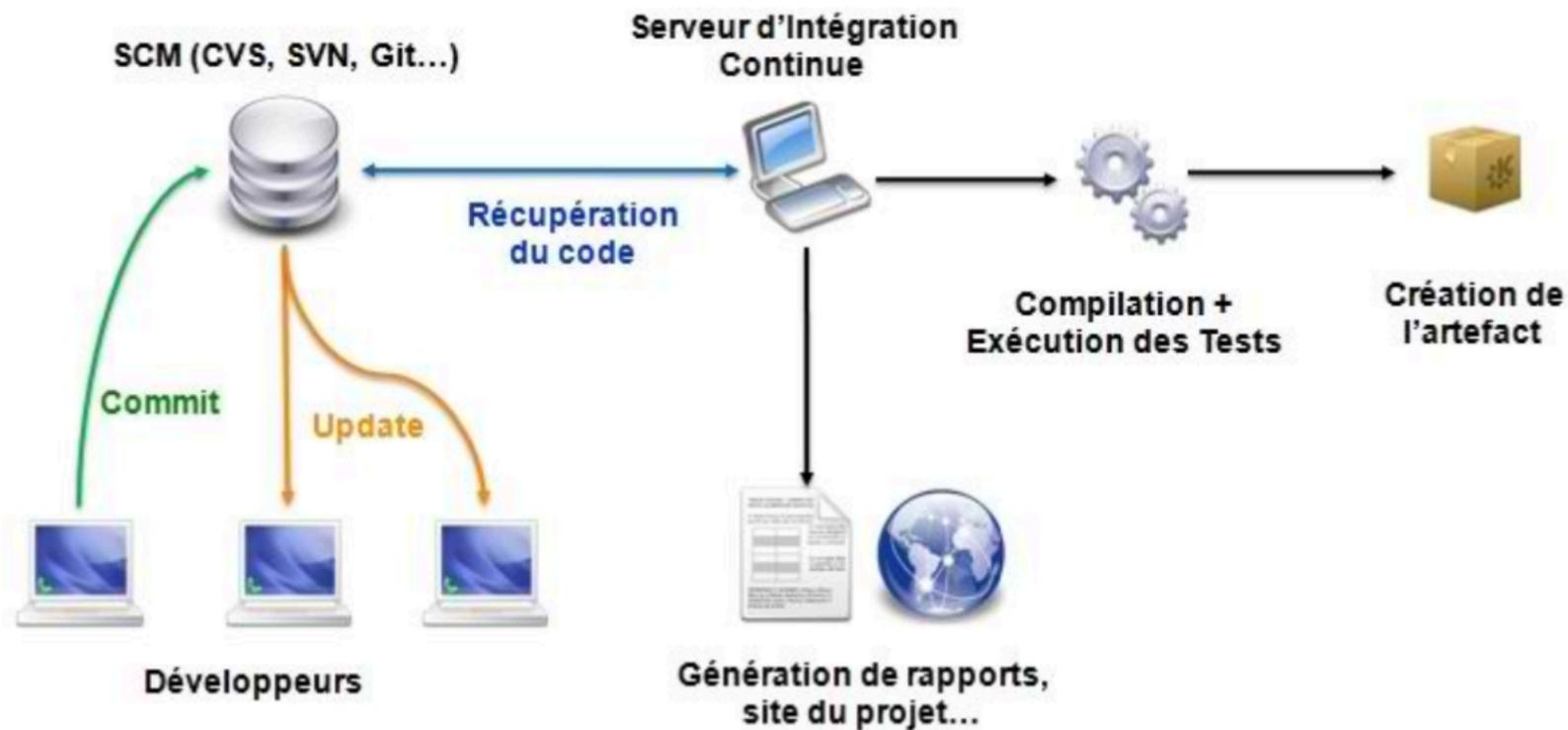


Quand?

Quand?

Intégration Continue

Tester en continu!



Quoi?

Quoi?

Intégration Continue : Principe

Vérifier à chaque modification de code source que le résultat des modifications ne produit **pas de régression** dans l'application développée

Quoi?

Intégration Continue : Prérequis

- Partage du code source via un **gestionnaire de version**
- **Intégration quotidienne** des modifications par les développeurs
- **Développement de tests** d'intégration de l'application

Quoi?

Intégration Continue : Avantages

- Le **test immédiat** des unités modifiées
- La **prévention** rapide en cas de code incompatible ou manquant
- Les problèmes d'intégration sont détectés et réparés **de façon continue**, évitant les problèmes de dernière minute
- Une version fonctionnelle est **toujours disponible** pour un test, une démonstration ou une distribution

Quoi?

Intégration Continue : Méthodologie

Automatisation des tâches

(compilation, tests unitaires, fonctionnels et d'intégration, tests de performance, validation, documentation ...)

Méthodologie **Agile**

- des valeurs (communication, simplicité, ...)
- des pratiques (petites livraisons, tests, ...)

Quoi?

Au-delà de l'intégration continue

Couverture du code

Vérification syntaxique

Construction d'image de conteneurs et
déploiement

Comment?

Comment?

Un outil d'intégration continue : CDash

Open source

CDash déployé sur son propre serveur ou hébergé chez Kitware (my.cdash.org)

Projet CMake (multiplateforme) / CTest

Événement - commit (Continuous)
- à la demande (Experimental)
- crontab (Nightly)

Compilation / Tests / Doc/

Couverture / Analyse Dynamique

sur notre architecture

(machine réelle, virtuelle, cluster, ...)

Envoi des résultats au [dashboard en ligne](#)



Comment?

L'exemple de CDash pour CMake

Comment?

L'exemple de CDash pour CMake

Compilation multiplateforme et Tests / Nightly

Login All Dashboards Wednesday, April 12 2017 14:16:52

CMake
Dashboard Calendar Previous Current Project

No file changed as of **Wednesday, April 12 2017 - 01:00 UTC**

- 1 hours ago: 1 test failed on Darwin-Tiger-Xcode21
- 1 hours ago: 4 warnings introduced on Darwin-Tiger-Xcode21
- 1 hours ago: 3 files changed by Brad King
- 2 hours ago: 3 tests failed on FreeBSD11-clang
- 4 hours ago: 1 test failed on OpenBSD-6.1-sparc64-gcc-4.9

See full feed

Scan Build 1 build

Site	Build Name	Update	Configure		Build		Start Time		
		Revision	Error	Warn	Error	Warn	Start Time		
elysium-linux.kitware	Linux-clang-scanbuild	8e0aff	0	0	0	0	10 hours ago		

Nightly Expected 134 of 149 builds

Site	Build Name	Update	Configure		Build		Test			Start Time
		Revision	Error	Warn	Error	Warn	Not Run	Fail	Pass	
trinsic.kitware	vs14-64-ninja	8e0aff	0	0	0	0	0	4 ⁺⁴ ₋₁	425 ⁺¹ ₋₄	13 hours ago
dash2win64.kitware	vs10-32-ninja	8e0aff	0	0	0	0	0	2 ⁺²	425 ₋₂	6 hours ago
dash2win64.kitware	Jom-VS9	8e0aff	0	0	0	0	0	1 ⁺¹	427 ₋₁	4 hours ago
dashmacmini2.kitware	DarwinIntel-g++	8e0aff	0	0	0	0	0	1 ₋₁	443 ⁺¹	6 hours ago
dash2win64.kitware	Win32-cygwin	8e0aff	0	0	0	0	0	1	429	6 hours ago
vesper.kitware	icl-64-ninja	8e0aff	0	0	0	0	0	1 ₋₁	362 ⁺¹	7 hours ago
hythloth.kitware	Linux-ninja-gcov	8e0aff	0	0	0	0 ₋₁	0	1 ⁺¹ ₋₁	470 ⁺¹ ₋₁	8 hours ago
dashmacmini4.kitware	Snow-Leopard-Xcode32-univ	8e0aff	0	0	0	0	0	1 ⁺¹	428 ₋₁	10 hours ago
vesper.kitware	vs6-nmake	8e0aff	0	0	0	0	0	1 ⁺¹	357 ₋₁	11 hours ago
dash2win64.kitware	Win64-vs10	8e0aff	0	0	0	0	0	1 ⁺¹	433 ₋₁	12 hours ago

<https://open.cdash.org/index.php?project=CMake>

Comment?

L'exemple de CDash pour CMake

Compilation multiplateforme et Tests / Continuous

Continuous										11 of 12 builds
Site	Build Name	Update	Configure		Build		Test			Start Time ▼
		Revision	Error	Warn	Error	Warn	Not Run	Fail	Pass	
purplekarrot.net	 clang-tidy	66be3a	0	0	0	0				12 minutes ago
purplekarrot.net	 include-what-you-use	66be3a	0	0	0	0				16 minutes ago
amber12.kitware	 Win64-nmake10-WINSDK-7.1	66be3a	0	0	0	0	0	0	427	30 minutes ago
faraway.kitware	 Linux	66be3a	0	0	0	0	0	0	485	36 minutes ago
faraway.kitware	 Linux	c8e214	0	0	0	0	0	0	485 ⁺⁶	57 minutes ago
amber12.kitware	 Win64-nmake10-WINSDK-7.1	c8e214	0	0	0	0	0	0	427	1 hour ago
faraway.kitware	 Linux	ddcfe8	0	0	0	0	0	0	479 ₋₆	3 hours ago
purplekarrot.net	 clang-tidy	ddcfe8	0	0	0	0				7 hours ago
purplekarrot.net	 include-what-you-use	ddcfe8	0	0	0	0				7 hours ago
amber12.kitware	 Win64-nmake10-WINSDK-7.1	ddcfe8	0	0	0	0	0	0	427	10 hours ago

Comment?

L'exemple de CDash pour CMake

Génération de la documentation

Continuous Help							3 builds
Site	Build Name	Update	Configure		Build		Start Time ▼
		Revision	Error	Warn	Error	Warn	
hythloth.kitware	 CMakeHelp	66be3a	0	0	0	0	36 minutes ago
hythloth.kitware	 CMakeHelp	c8e214	0	0	0	0	1 hour ago
hythloth.kitware	 CMakeHelp	ddcfe8	0	0	0	0	2 hours ago

Comment?

L'exemple de CDash pour CMake

Couverture

Coverage					
Site	Build Name	Percentage	LOC Tested	LOC Untested	Date
dash23.kitware	Linux-g++4.1	73.99% <small>-0.07%</small>	43539 <small>-44</small>	15305 <small>+41</small>	13 hours ago
dash22.kitware	Win32-vs9-Release-Coverage	70.04%	455000	194600	13 hours ago
CDash Server	Aggregate Coverage	82.27% <small>+7.45%</small>	54681 <small>+8763</small>	11785 <small>-3671</small>	13 hours ago
hythloth.kitware	Linux-bullseye-cov	80.68%	436100	104400	12 hours ago
dash5ubuntu.kitware	Linux-g++4.6.1	75.98%	43547	13765	12 hours ago
hythloth.kitware	Linux-ninja-gcov	75.49% <small>+0.02%</small>	51508 <small>-63</small>	16728 <small>-37</small>	8 hours ago

Comment?

L'exemple de CDash pour CMake

Analyse dynamique avec
Valgrind
AddressSanitizer

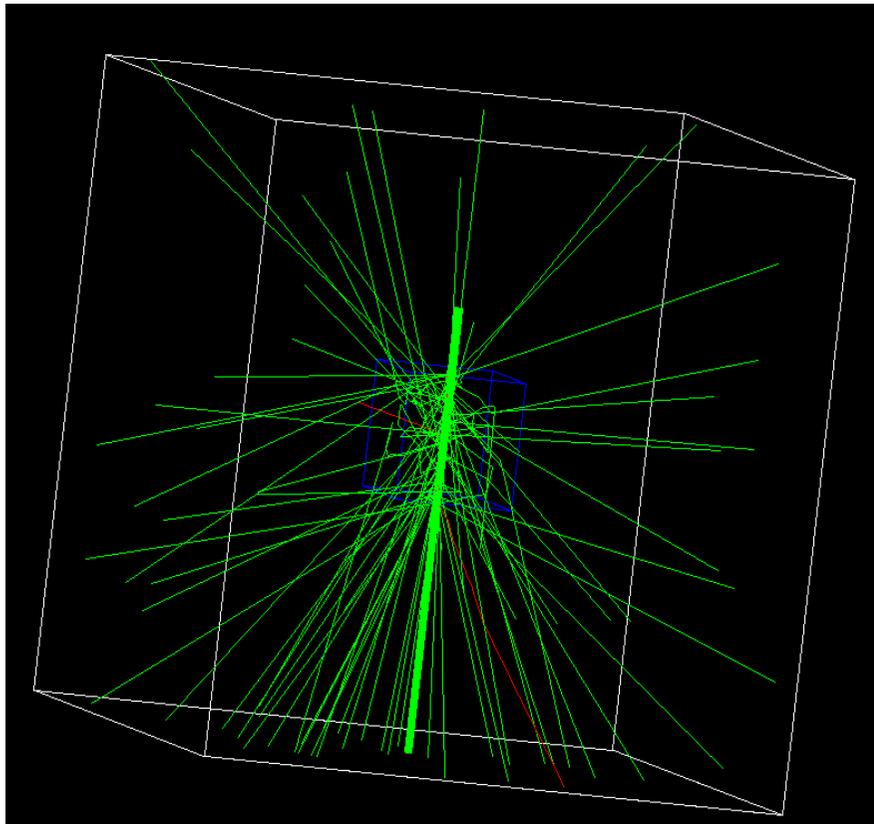
Dynamic Analysis				
Site	Build Name	Checker	Defect Count	Date
dash23.kitware	Linux-g++4.1	Valgrind	0	13 hours ago
dashlin1.kitware	Linux-valgrind	Valgrind	132	12 hours ago
elysium-linux.kitware	Linux-clang-sanitizer	AddressSanitizer	0	11 hours ago
faraway.kitware	Linux-valgrind2	Valgrind	0	7 hours ago

Comment?

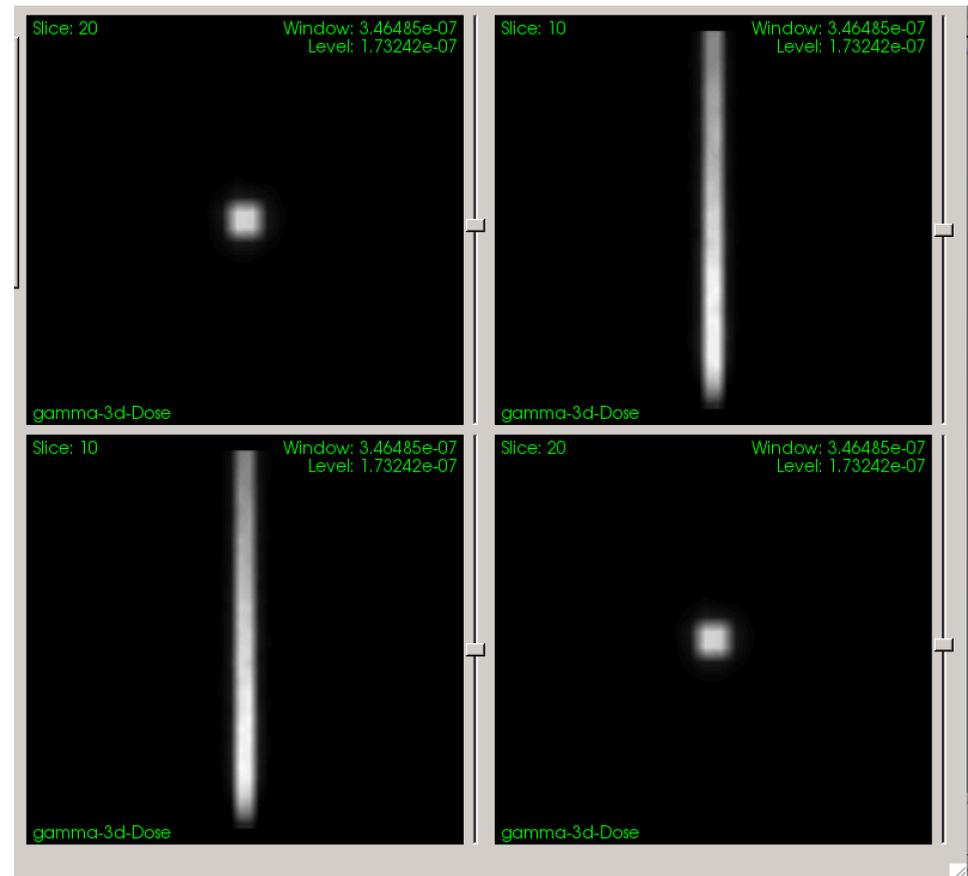
Retour d'expérience : CDash pour Gate

Comment?

Retour d'expérience : CDash pour Gate



gamma beam in waterbox.



gamma-3d-Dose visualization with vv.

Comment?

Retour d'expérience : CDash pour Gate

Images de référence récupérées depuis le serveur Midas

The screenshot shows the MIDAS web interface. At the top, there is a navigation bar with 'DAS | Kitware | Starting Guide' on the left and 'Claire Mouton | Logout' on the right. Below this is a search bar and an 'Upload' button. The main content area is titled 'OpenGate' and has tabs for 'Data', 'Feed', 'Info', and 'Shared with members'. A table lists files and folders with columns for Name, Size, and Modified. The file 'benchRT-reference.tgz' is selected and highlighted in blue. To the right of the table, there are sections for 'COMMUNITY ACTIONS' (Manage, Send invitation, Create a top level Folder), 'SELECTED ITEM' (View, Download, Share, Copy, Permissions, Move, Remove Item from Folder), and 'INFO' (Created: 10/02/2015, Uploaded by: Claire Mouton, Revisions: 8, Files: 1, Size: 230.7 KB). The footer of the page reads 'MIDAS 3.2.14 by Kitware © 2015 - Generated in 1.302 s - Report bug'.

Name	Size	Modified	
▶ Private	--	2 yearss	<input type="checkbox"/>
▼ Public	--	2 yearss	<input type="checkbox"/>
▼ benchmarks	--	2 yearss	<input type="checkbox"/>
▶ benchPET	--	2 yearss	<input type="checkbox"/>
▼ benchRT	--	2 yearss	<input type="checkbox"/>
▶ output	--	2 yearss	<input type="checkbox"/>
▼ reference	--	7 months	<input type="checkbox"/>
▶ benchRT-reference.tgz	230.7 KB	2 weeks	<input type="checkbox"/>
▶ resultat	--	2 yearss	<input type="checkbox"/>
▶ benchSPECT	--	2 yearss	<input type="checkbox"/>
▶ benchVoxelRegular25x25x25	--	2 yearss	<input type="checkbox"/>
▶ dosigate-examples	--	2 yearss	<input type="checkbox"/>
▶ examples	--	2 yearss	<input type="checkbox"/>

Comment?

Retour d'expérience : CDash pour Gate

Vue d'ensemble du Dashboard

CDash - GATE

my.cdash.org/index.php?project=GATE

Rechercher

Login All Dashboards Plans & Pricing Support

Wednesday, March 23 2016 17:22:20 EDT

GATE

Dashboard Calendar Previous Current Project

No file changed as of **Wednesday, March 23 2016 - 01:00 EDT**

- 6 hours ago: 3 tests failed on macosx64-gcc_4.2.1-geant4_10.01.p02-opengate-creatis-develop
- 6 hours ago: 1 warning introduced on macosx64-gcc_4.2.1-geant4_10.01.p02-opengate-creatis-develop
- 7 hours ago: 3 tests failed on macosx64-gcc_4.2.1-geant4_10.01.p02-opengate-creatis-develop
- 7 hours ago: 50 warnings introduced on macosx64-gcc_4.2.1-geant4_10.01.p02-opengate-creatis-develop
- 7 hours ago: 30 errors introduced on macosx64-gcc_4.2.1-geant4_10.01.p02-opengate-creatis-develop

See full feed

Site	Build Name	Update		Configure		Build			Test		Time	Build Time		
		Files	Time	Error	Warn	Time	Error	Warn	Time	Not Run			Fail	Pass
linux15.dg.creatis.insa-lyon.fr	linux-gcc_4.8.3-geant4_10.02-opengate-creatis-hybrid_cuda	0	0s	0	0	0s	40	32	4m 12s	0	0	0	0s	15 hours ago
macosx64.inserm.toulouse.fr	macosx64-gcc_4.2.1-geant4_10.01.p02-opengate-creatis-develop	0	0s	0	0	0s	0 ₋₅₀	1 ₋₄₉	3m 24s	0	3	0	0s	6 hours ago
latim.univ-brest.fr	linux-gcc_4.7.2-geant4_10.01-Gate-develop_gpu	0	0s	0	0	0s	0	14	1m 54s	0	0	0	0s	15 hours ago
linux15.dg.creatis.insa-lyon.fr	linux-gcc_4.8.3-geant4_10.02-Gate-develop	0	0s	0	0	0s	0	0	3m 24s	0	0	3	18s	15 hours ago
linux15.dg.creatis.insa-lyon.fr	linux-gcc_4.8.3-geant4_10.02-Gate-develop_c++11	0	0s	0	0	0s	0	0	3m 18s	0	0	3	18s	15 hours ago
linux15.dg.creatis.insa-lyon.fr	linux-gcc_4.8.3-geant4_10.02-QtON-opengate-creatis-develop	0	0s	0	0	0s	0	0	3m 30s	0	0	3	24s	15 hours ago
linux15.dg.creatis.insa-lyon.fr	linux-gcc_4.8.3-geant4_10.02-opengate-creatis-develop	0	0s	0	0	0s	0	0	3m 24s	0	0	3	18s	15 hours ago

Comment?

Retour d'expérience : CDash pour Gate

Les fichiers CMake

Configuration pour la compilation du projet et Ctest

2017-04-10 05:12:00 -- /home/jfc/opengate-github/opengate-creatis-dashboard/linux15_lin64/linux-gcc_4.8.5-geant4_10.02-opengate-public-develop_gpu.cmake

```
# Choose here Geant4 version to use by setting its path.
set(GEANT4_DIR "$ENV{HOME}/geant4.10.02/geant4.10.02-install/lib/Geant4-10.2.0")
set(GEANT4_VERSION "10.02")

# Edit the branch name.
set(CTEST_GIT_BRANCH "develop")
# Edit the name of the repository to be cloned and tested.
set(CTEST_GIT_REPOSITORY "Gate")
# Edit the URL of the repository.
set(CTEST_GIT_URL "https://github.com/OpenGATE")

set(ENV{CUDA_BIN_PATH} "/usr/local/cuda/bin")
# Specific options
set(CTEST_SPECIFIC_OPTION "gpu")
set(CTEST_CONFIGURE_COMMAND_OPTIONS "\"-DGATE_USE_GPU:BOOL=ON\" \"-DCUDA_CUDA_LIBRARY:PATH=/usr/lib/x86_64-linux-gnu/libcuda.so.1\"")

include("$ENV{SCRIPT_DIRECTORY}/linux15_lin64/linux15_lin64_common.cmake")
```

Lancement via CTest

```
ctest_start(Nightly)
ctest_update()
ctest_configure()
ctest_build()
ctest_test()
ctest_submit()
```

Comment?

Retour d'expérience : CDash pour Gate

Build log avec détail des erreurs

Build Log Line 269

```
[ 7%] Building CXX object itk-mhd/src/CMakeFiles/MetaIO.dir/metaVesselTube.o
[ 7%] Building CXX object itk-mhd/src/CMakeFiles/MetaIO.dir/metaTransform.o
[ 7%] Building CXX object itk-mhd/src/CMakeFiles/MetaIO.dir/metaTubeGraph.o
[ 8%] Building CXX object itk-mhd/src/CMakeFiles/MetaIO.dir/metaForm.o
[ 8%] Building CXX object itk-mhd/src/CMakeFiles/MetaIO.dir/metaArray.o
[ 8%] Building CXX object itk-mhd/src/CMakeFiles/MetaIO.dir/metaFEMObject.o
[ 8%] Linking CXX static library libMetaIO.a
[ 8%] Built target MetaIO
[ 8%] Building NVCC (Device) object CMakeFiles/Gate.dir/source/gpu/src/Gate_generated_GateGPUManager.cu.o
nvcc fatal   : Unsupported gpu architecture 'compute_21'
```

Error

CMake Error at Gate_generated_GateGPUManager.cu.o.cmake:207 (message) :

```
Error generating
/.../Gate-develop-bin-10.02_gpu/CMakeFiles/Gate.dir/source/gpu/src/./Gate_generated_GateGPUManager.cu.o
```

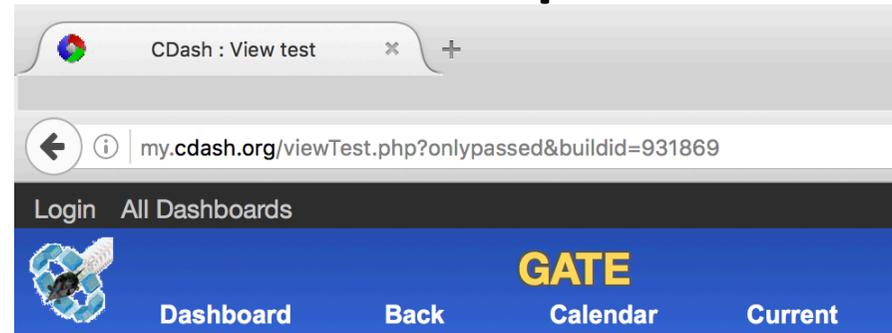
Scanning dependencies of target Gate

```
[ 8%] Building CXX object CMakeFiles/Gate.dir/Gate.cc.o
[ 8%] Building CXX object CMakeFiles/Gate.dir/source/arf/src/GateARFSD.cc.o
[ 8%] Building CXX object CMakeFiles/Gate.dir/source/arf/src/GateARFTableMgrMessenger.cc.o
[ 8%] Building CXX object CMakeFiles/Gate.dir/source/arf/src/GateARFSDMessenger.cc.o
[ 8%] Building CXX object CMakeFiles/Gate.dir/source/arf/src/GateARFTable.cc.o
```

Comment?

Retour d'expérience : CDash pour Gate

Résultat des tests



Testing started on 2016-03-23 06:05:48

Site Name:linux15.dg.creatis.insa-lyon.fr

Build Name:linux-gcc_4.8.3-geant4_10.02-Gate-develop

Total time:23s 60ms

OS Name:Linux

OS Platform:x86_64

OS Release:4.4.5-200.fc22.x86_64

OS Version:#1 SMP Thu Mar 10 17:54:17 UTC 2016

Compiler Version:unknown

3 tests passed.

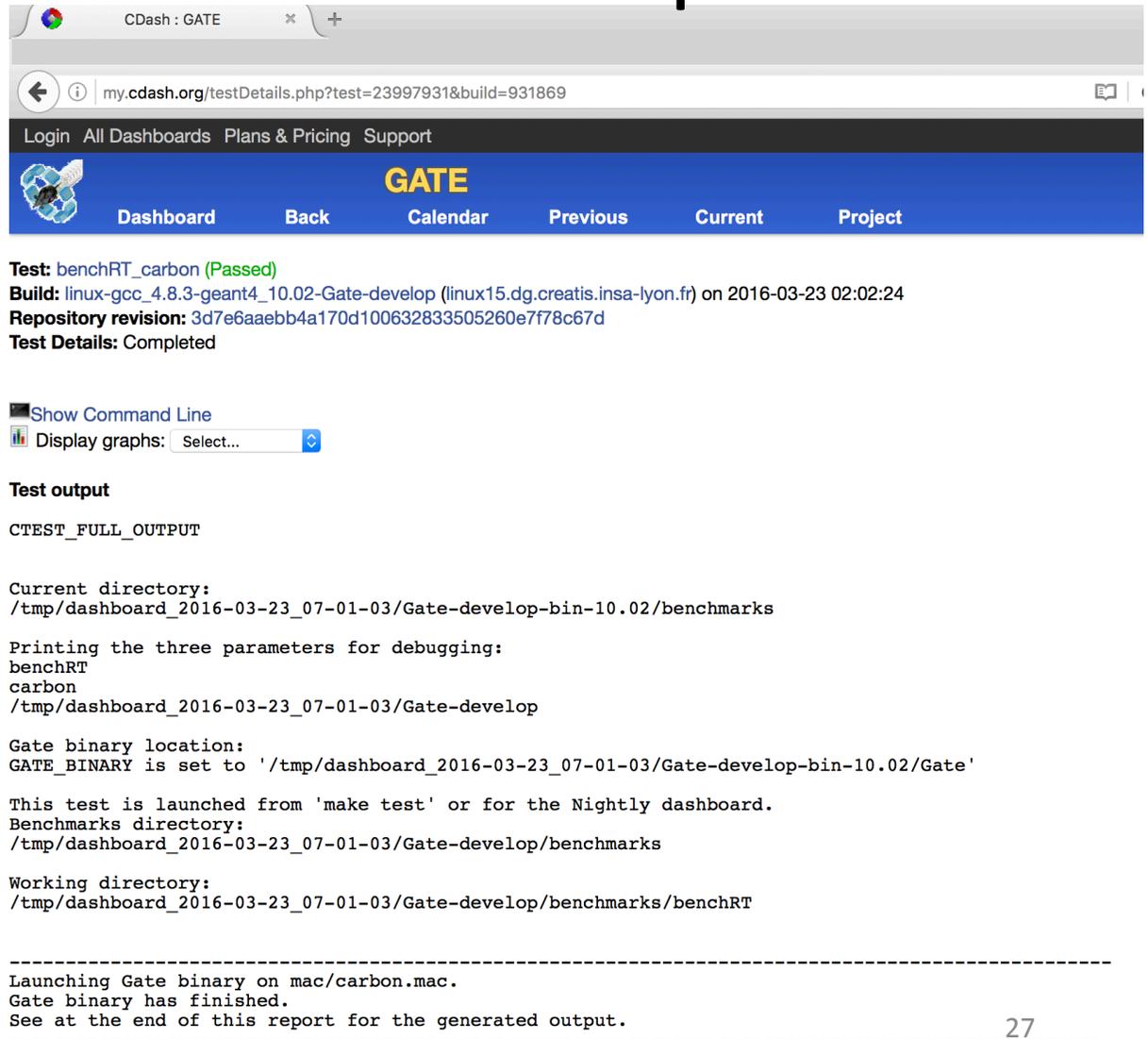
Name	Status	Time	Summary
benchRT_carbon	Passed	6s 340ms	Stable
benchRT_proton	Passed	1s 270ms	Stable
benchRT_gamma	Passed	15s 450ms	Stable

[Download Table as CSV File](#)

Comment?

Retour d'expérience : CDash pour Gate

Exemple de log
des tests (1/2)



The screenshot shows a web browser window with the URL `my.cdash.org/testDetails.php?test=23997931&build=931869`. The page header includes navigation links: `Login`, `All Dashboards`, `Plans & Pricing`, and `Support`. Below the header is a blue navigation bar with the **GATE** logo and buttons for `Dashboard`, `Back`, `Calendar`, `Previous`, `Current`, and `Project`.

The main content area displays the following test details:

- Test:** `benchRT_carbon` (Passed)
- Build:** `linux-gcc_4.8.3-geant4_10.02-Gate-develop` (`linux15.dg.creatis.insa-lyon.fr`) on 2016-03-23 02:02:24
- Repository revision:** `3d7e6aaebb4a170d100632833505260e7f78c67d`
- Test Details:** Completed

Below the details are interactive options:

- `Show Command Line` (with a terminal icon)
- `Display graphs:` (with a dropdown arrow)

The **Test output** section contains the following text:

```
CTEST_FULL_OUTPUT

Current directory:
/tmp/dashboard_2016-03-23_07-01-03/Gate-develop-bin-10.02/benchmarks

Printing the three parameters for debugging:
benchRT
carbon
/tmp/dashboard_2016-03-23_07-01-03/Gate-develop

Gate binary location:
GATE_BINARY is set to '/tmp/dashboard_2016-03-23_07-01-03/Gate-develop-bin-10.02/Gate'

This test is launched from 'make test' or for the Nightly dashboard.
Benchmarks directory:
/tmp/dashboard_2016-03-23_07-01-03/Gate-develop/benchmarks

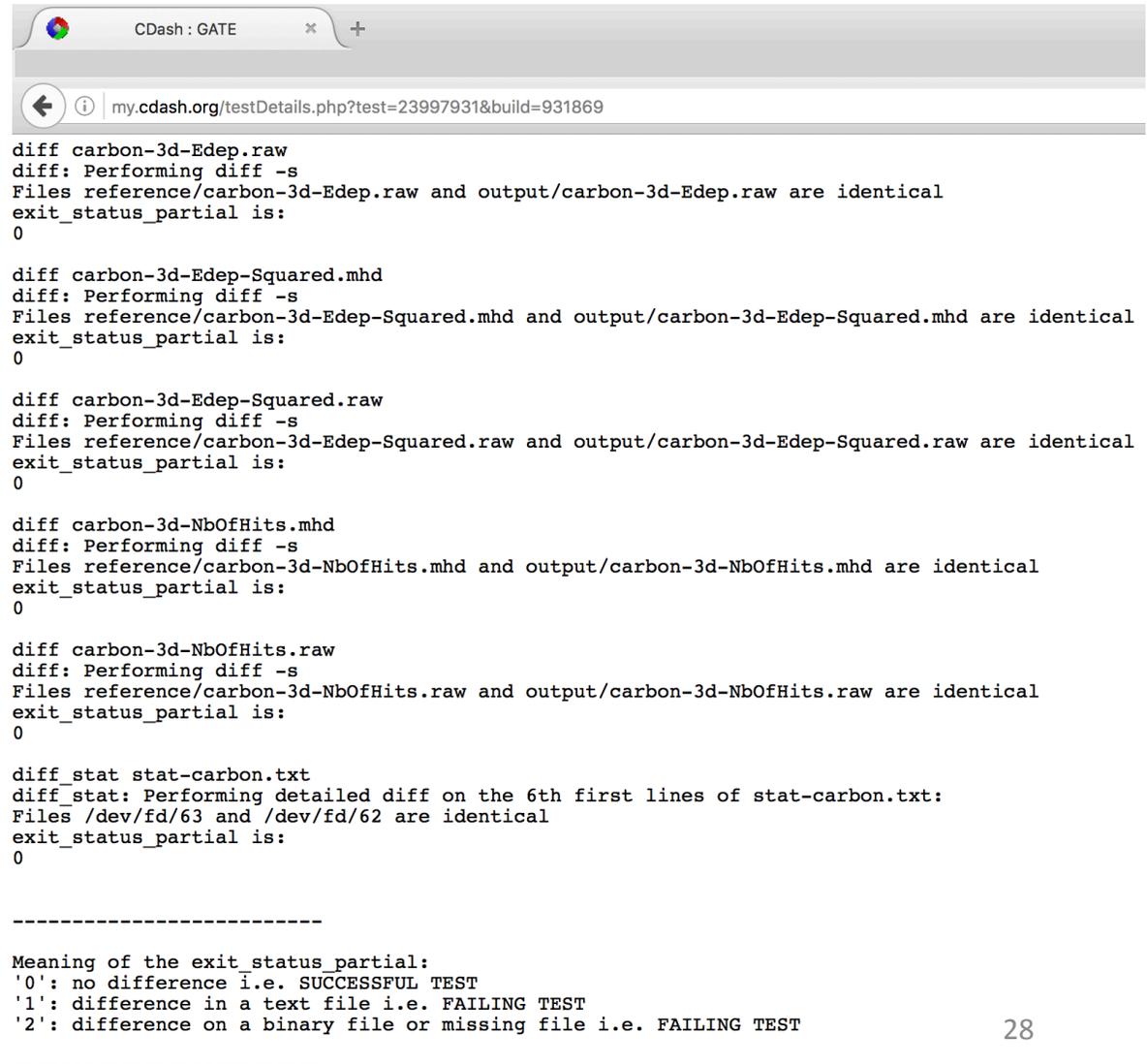
Working directory:
/tmp/dashboard_2016-03-23_07-01-03/Gate-develop/benchmarks/benchRT

-----
Launching Gate binary on mac/carbon.mac.
Gate binary has finished.
See at the end of this report for the generated output.
-----
```

Comment?

Retour d'expérience : CDash pour Gate

Exemple de log
des tests (2/2)



```
diff carbon-3d-Edep.raw
diff: Performing diff -s
Files reference/carbon-3d-Edep.raw and output/carbon-3d-Edep.raw are identical
exit_status_partial is:
0

diff carbon-3d-Edep-Squared.mhd
diff: Performing diff -s
Files reference/carbon-3d-Edep-Squared.mhd and output/carbon-3d-Edep-Squared.mhd are identical
exit_status_partial is:
0

diff carbon-3d-Edep-Squared.raw
diff: Performing diff -s
Files reference/carbon-3d-Edep-Squared.raw and output/carbon-3d-Edep-Squared.raw are identical
exit_status_partial is:
0

diff carbon-3d-NbOfHits.mhd
diff: Performing diff -s
Files reference/carbon-3d-NbOfHits.mhd and output/carbon-3d-NbOfHits.mhd are identical
exit_status_partial is:
0

diff carbon-3d-NbOfHits.raw
diff: Performing diff -s
Files reference/carbon-3d-NbOfHits.raw and output/carbon-3d-NbOfHits.raw are identical
exit_status_partial is:
0

diff_stat stat-carbon.txt
diff_stat: Performing detailed diff on the 6th first lines of stat-carbon.txt:
Files /dev/fd/63 and /dev/fd/62 are identical
exit_status_partial is:
0

-----

Meaning of the exit_status_partial:
'0': no difference i.e. SUCCESSFUL TEST
'1': difference in a text file i.e. FAILING TEST
'2': difference on a binary file or missing file i.e. FAILING TEST

-----
```

D'autres outils

Travis CI

Gratuit pour projets open-source – Licence MIT (open source)

Hébergé : compilation, exécution en ligne

Interfacé à Github

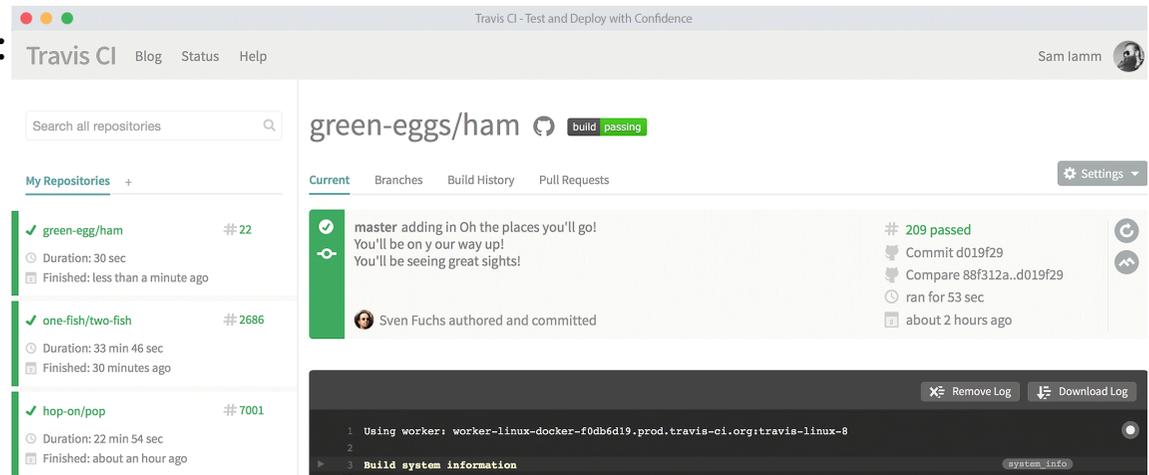
Unix / Pas d'environnement Windows

Limites de la version gratuite :

Temps limité

2 threads maximum

Pas d'accès aux machines
(seul le log est accessible)



Branch build flow



You push your code to GitHub



GitHub triggers Travis CI to build



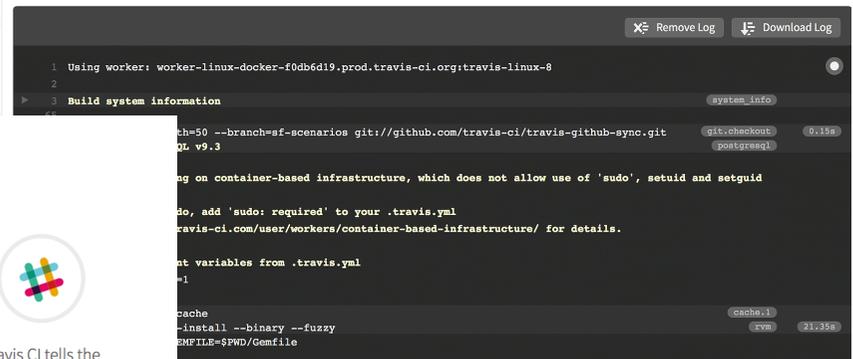
Hooray! Your build passes!



Travis CI deploys to Heroku



Travis CI tells the team all is well



Appveyor

Equivalent à Travis CI pour **Windows**
Propriétaire

The screenshot shows the Appveyor web interface for a project named "MyWebApp - release". The top navigation bar includes the Appveyor logo, "PROJECTS", "ENVIRONMENTS", "DOCS", "SUPPORT", and a user profile for "THOMAS". Below the project name, there are tabs for "LATEST BUILD", "HISTORY", "DEPLOYMENTS", and "SETTINGS". On the right, there are buttons for "NEW BUILD", "RE-BUILD COMMIT", and "DOWNLOAD LOG". The main content area shows a build summary for version "1.0.2" with the message "New tests added" and "2 hours ago by Jon". It also displays the branch "master" and commit hash "39127cab". Below the summary, there are tabs for "CONSOLE", "MESSAGES", "TESTS 2", and "ARTIFACTS 1". The console output is visible in a dark blue box with white text, showing the build process steps.

```
1 Build started
2 git clone -q --branch=master git://github.com/john/mywebapp.git C:\projects\mywebapp
3 git checkout -qf 39127cab42c14f841c622f6b94a42440cc23ac9
4 msbuild "MyWebApp\MyWebApp.sln" /verbosity:minimal /logger:"C:\Program Files\Appveyor\BuildAgent\Appveyor.MSBuildLogger.dll"
5 Microsoft (R) Build Engine version 12.0.30723.0
6 [Microsoft .NET Framework, version 4.0.30319.34209]
7 Copyright (C) Microsoft Corporation. All rights reserved.
```

Gitlab-CI



Intégré à **GitLab** - fichier ".gitlab-ci.yml" à la racine de votre dépôt

Open source

Multi-plateforme

Multi-langage

Compilation en **parallèle**

Possibilité d'utiliser des images **Docker** personnalisées

GitLab CI Add Project Users Background Jobs  dmitriy.zaporozhets@gmail.com Logout

Project: GitLab db:mysql (Public) [View on GitLab](#) [Details](#) [Stats](#) [Edit](#)

All builds [master](#) [4-2-stable](#) [gitlabdotcom-5-0](#) [5-0-stable](#)

Status	Commit	Message	Branch	Duration	Finished at
running	c1a9e9228	Fix badge image url to ci.gitlab.org	master	about 1 hour	
success	97de212e8	Merge pull request #3522 from dplarson/correct-...	master	about 1 hour	about 12 hours ago
success	97de212e8	Merge pull request #3522 from dplarson/correct-...	master	about 1 hour	1 day ago
success	8bd99779f	Merge pull request #3538 from AeroNotix/patch-1...	master	about 1 hour	1 day ago
success	5577ee826	remove outdated routing specs	master	about 1 hour	1 day ago
failed	e0df75de3	refactor Issues.js. Remove unused actions. Resp...	master	about 1 hour	2 days ago
success	7f3687537	Fixed mr filter tests	master	about 1 hour	2 days ago
success	9fddd5b44	Refactoring & restyle pagination: - remove adm...	master	about 1 hour	2 days ago
success	52ad34fd5	New entries in CHANGELOG	master	about 1 hour	3 days ago
success	f4ae433d9	Increase event title font size on dashboard act...	master	about 1 hour	3 days ago
success	5b06c9a73	apply redesigned MR list to dashboard, group etc	master	about 1 hour	3 days ago
success	b6e71360b	fix resicpes to point 5-0-stable branch	5-0-stable	39 minutes	3 days ago

Jenkins (fork de Hudson)

Open source

A installer sur sa propre infrastructure

Interfacé à gestionnaires de versions tels que CVS, Subversion, Git

Exécute des projets basés sur Apache Ant et Apache Maven aussi bien que des scripts en *shell Unix* ou *batch Windows*

Solution de remplacement populaire à l'outil de référence CruiseControl



Jenkins

Strider-CD

Open source

Intégration continue et serveur de **déploiement**

A **installer** sur sa propre infrastructure

Interfaçable à Github, Gitlab, Bitbucket, Node.js, Docker

Strider			
Dashboard	Projects	Account	Admin
Latest Builds:			
Job	Project	Commit	Duration
 51f458a7	 jaredly/codetalker		 135s 
 51f45893	  notablemind/note		 5s 2 minutes ago
  51f45498	  Strider-CD/strider	 jshint fixes	 481s 11 minutes ago
 51f2db75	  Strider-CD/strider-simple-worker	 Merge pull request #15 from Strider-CD/c	 35s a day ago
 51f2b384	  Strider-CD/strider-travis		 6s a day ago
 51eec859	  jaredly/org-lite		 1s 4 days ago
 51eec4e5	  jaredly/search		 607s 4 days ago
 51eb90b1	  notablemind/socketio-monitor		 1s 7 days ago

Comparaisons avec d'autres outils

Name	Platform	License	Builders: Windows	Builders: Java	Builders: other	Notification	Integration, IDEs	Integration, other
AnthillPro	Cross-platform	Proprietary	MSBuild, NAnt, Visual Studio	Ant, Maven 1-2-3	Shell script, batch script, cross-platform command-line, Groovy, Make, RTC Jazz, TFS Build, Custom Script Interpreter	Email, XMPP, RSS, Systray	Eclipse, Visual Studio	Many
Apache Continuum	JDK, web container	Apache 2.0	Unknown	Maven 1-2-3	Shell script ^[2]	Mail, XMPP and Google Talk, MSN, IRC, report deployment with wagon	Unknown	Unknown
Apache Gump	Python	Apache 2.0	Unknown	Ant, Maven 1	Unknown	Email	Unknown	Unknown
AppVeyor	Hosted	Proprietary	Visual Studio, MSBuild, Psake	No	Custom Script, PowerShell	Email, HipChat, Slack, Catlight [Ⓔ]	No	GitHub, Bitbucket, Kiln, Windows Azure
Bamboo	Web container	Proprietary	MSBuild, ^[3] NAnt, ^[4] Visual Studio ^[5]	Ant, ^[6] Maven 1-2-3 ^[7]	Custom script, command-line tool, Bash, Xcode, ^[8] Phing, ^[9] Grunt	XMPP, Google Talk, Email, RSS, Remote API, HipChat	IntelliJ IDEA, Eclipse, Visual Studio	FishEye, Jira, Clover, Bitbucket, GitHub
Buddy	Cross-platform	Proprietary	No	Ant, Maven, Gradle	Elixir, Go, Haskell, Node.js, PHP, Python, Ruby, .NET Core	Desktop, Email, Slack, SMS	No	Amazon Web Services, Bitbucket, GitHub, GitLab, Google Cloud Services, Heroku, Modulus
BuildBot	Python	GPL	Command-line	Command-line	Command-line	Email, Web, GUI, IRC	Unknown	Unknown
BuildMaster	Cross-platform	Proprietary	Yes	Yes	Cross-platform command-line	Email, custom	No	Many
CABIE	LAMP	GPL2	Unknown	Unknown	Unknown	Web	Unknown	Unknown
CruiseControl	Cross-platform	BSD-style	NAnt, Rake, Xcode	Phing, Apache Ant, Maven	catch-all 'exec'	Email, CCTray	Eclipse	Unknown
CruiseControl.NET	Cross-platform	BSD-style	MSBuild, NAnt, Visual Studio	Unknown	Command-line	Email, CCTray, RSS	Unknown	Unknown
GoCD	Cross-platform	Apache 2.0	Command-line	Command-line	Command-line	Email, hipchat, Slack, Gerrit, Gitter, Riemann etc [Ⓔ]	No	GitHub
Jenkins-Hudson	Web container	Creative Commons and MIT	MSBuild, NAnt	Ant, Maven 2, Kundo	Cmake, Gant, Gradle, Grails, Phing, Rake, Ruby, SCons, Python, shell script, command-line	Android, Email, Google Calendar, IRC, XMPP, RSS, Twitter, Slack, Catlight, CCMenu, CCTray	Eclipse, IntelliJ IDEA, NetBeans	Bugzilla, Google Code, Jira, Bitbucket, Redmine, FindBugs, Checkstyle, PMD and Mantis, Trac, HP ALM
OpenMake Software Meister	Cross-platform	Proprietary	MSBuild, NAnt, Visual Studio	Ant, Maven 1-2-3	Shell script, batch script, cross-platform command-line, Groovy, Make, RTC Jazz, TFS Build, Custom Script Interpreter	Email, XMPP, RSS, Systray	Eclipse, Visual Studio	Bugzilla, Google Code, Jira, Bitbucket, Redmine, FindBugs, Checkstyle, PMD and Mantis, Trac
Travis CI	Hosted	MIT	No	Ant, Maven, Gradle ^[10]	C, C++, Clojure, Elixir, Erlang, Go, Groovy, Haskell, Java, Node.js, Perl, PHP, Python, Ruby, Rust, Scala, Smalltalk	Email, Campfire, HipChat, IRC, Slack, Catlight, CCMenu, CCTray	No	GitHub, Heroku
TeamCity	Web container	Proprietary	MSBuild, NAnt, Visual Studio, ReSharper-based .NET code analysis	Ant, Maven 2-3, Gradle, IntelliJ IDEA-based build and code analysis	command-line, PowerShell ^[11] , Xcode ^[12] , Rake, FxCop	Email, XMPP, RSS, IDE, SysTray, Catlight	Eclipse, Visual Studio, IntelliJ IDEA, RubyMine, PyCharm, PhpStorm, WebStorm	JetBrains YouTrack, Jira, Bugzilla, FishEye, FindBugs, PMD, dotCover, NCover
Team Foundation Server, Visual Studio Team Services (VSTS)	Cross-platform	Proprietary, MIT	MSBuild, Visual Studio	Ant, Maven, Gradle, Android	C, C++, Go, Groovy, Java, Node.js, Perl, PHP, Python, Ruby	Email, SOAP, Catlight	Visual Studio, Eclipse, IntelliJ IDEA, Android Studio, Visual Studio Code	GitHub, Jenkins, Slack, Hipchat, FindBugs, Checkstyle, PMD
Vexor	Hosted	Proprietary	No	Unknown	Ruby, Clojure, Scala, Python, Node.js, Go, Rust, Haskell	Email, HipChat, Slack	Unknown	GitHub, Bitbucket, Gitter

https://en.wikipedia.org/wiki/Comparison_of_continuous_integration_software

<https://www.slant.co/topics/799/~best-continuous-integration-tools>

<https://www.slant.co/topics/186/~best-hosted-continuous-integration-services>

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Au programme : Git, Docker,

Jenkins, Gitlab CI, Travis CI