

Ferramentas e Tecnologias para o Trabalho Distribuído e Colaborativo

Paulo Igor

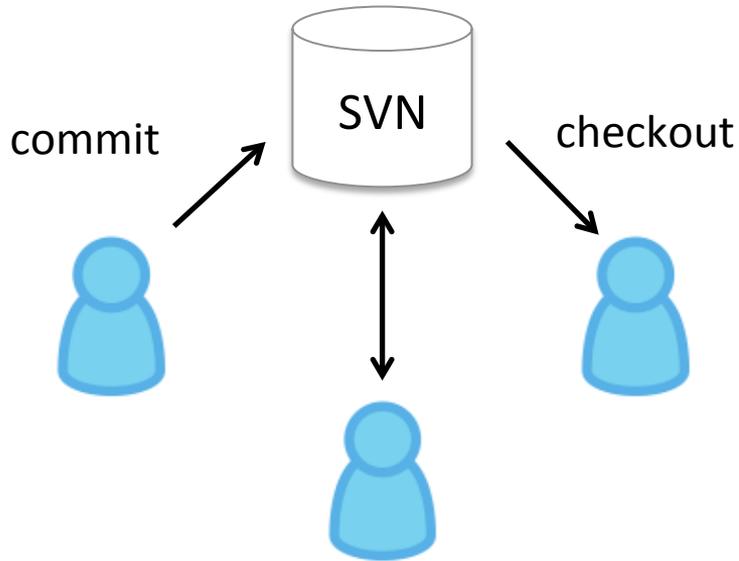
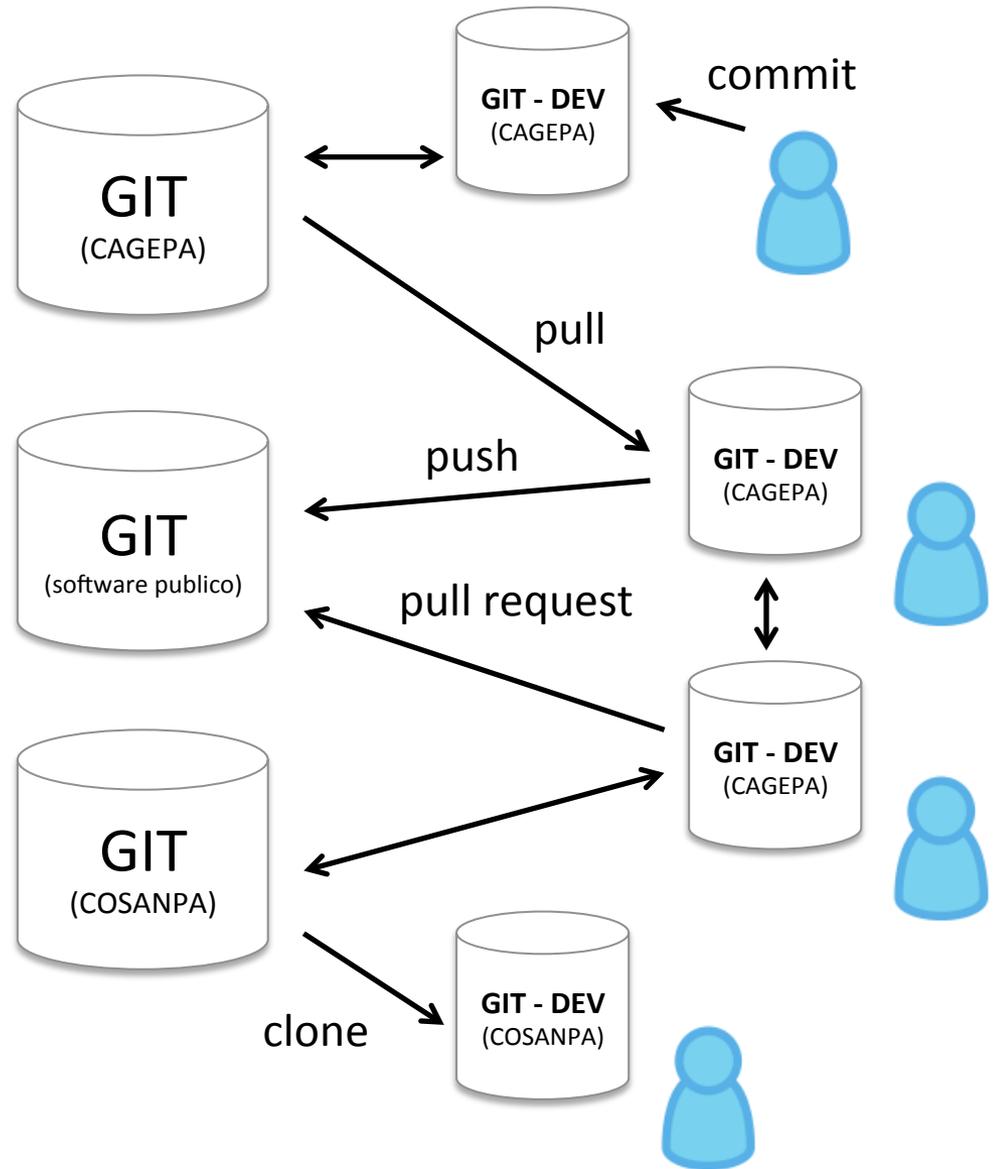
Ferramentas

- Controle de Versão - **GIT**
- Integração Contínua - **Jenkins**
 - Testes Automatizados
 - Relatórios de Cobertura
- Inspeção de Código Automatizada - **Sonar**

SVN vs GIT

Centralizado ou Distribuído

Modelo Descentralizado



Modelo Centralizado

Características - GIT

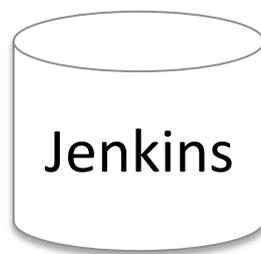
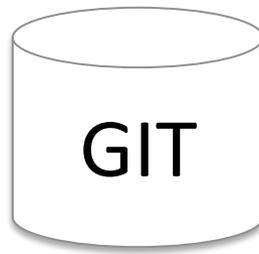
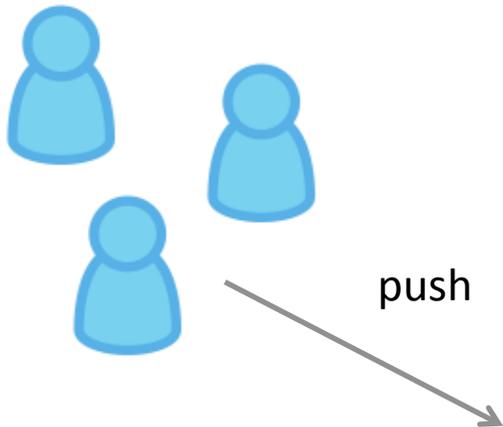
- Criado em 2005 por Linus Torvald
 - Open Source (GPL v2)
 - inicialmente para suportar o projeto do Kernel Linux
- Modelo descentralizado
- Commits podem ser transferidos de um repositório para outro facilmente
- Suporte para desenvolvimento distribuído
- Construído para grandes projetos

Integração Contínua

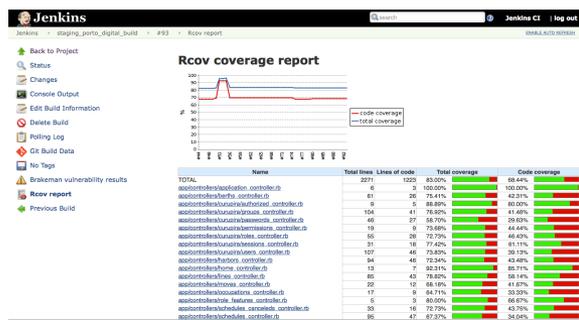
Jenkins

“Integração Contínua é uma prática de desenvolvimento de software onde os **membros de um time integram seu trabalho frequentemente**, geralmente cada pessoa integra pelo menos diariamente – podendo haver múltiplas integrações por dia. **Cada integração é verificada por um build automatizado (incluindo testes) para detectar erros de integração o mais rápido possível.** Muitos times acham que essa abordagem leva a **uma significativa redução nos problemas de integração e permite que um time desenvolva software coeso mais rapidamente.**”

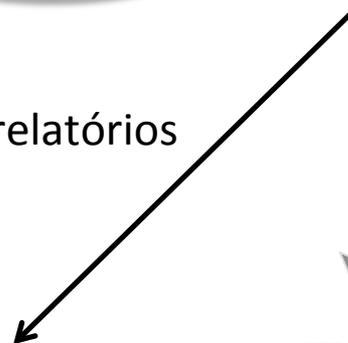
Martin Fowler



- Verifica novidades no repositório
- Compila o código
- Executa os testes automatizados
- **Atualiza os relatórios dos testes e estatísticas do código executados**
- Gera o build



relatórios



Integração Contínua

- Feedback Instantâneo
- Mais segurança em relação a mudanças
- Automatização
 - Build
 - Testes
 - Relatórios

Jenkins - Projetos

Jenkins [log in](#) [ENABLE AUTO REFRESH](#)

People
Build History
Project Relationship
Check File Fingerprint
Credentials

Build Queue —
No builds in the queue.

Build Executor Status —
1 Idle
2 Idle

S	W	Name ↓	Last Success	Last Failure	Last Duration
		stage_gsan_online_deploy	1 mo 26 days - #20	1 mo 26 days - #19	43 sec
		stage_gsan_online_build	1 mo 26 days - #22	3 mo 5 days - #11	54 sec
		stage_gsan_cadastro_deploy	1 mo 27 days - #18	2 mo 2 days - #15	43 sec
		stage_gsan_cadastro_build	1 mo 27 days - #31	2 mo 1 day - #28	2 min 5 sec
		stage-gsan-relatorios-deploy	23 days - #16	1 mo 26 days - #8	1 min 1 sec
		stage-gsan-relatorios-build	23 days - #17	2 mo 2 days - #2	41 sec
		stage-gsan-persistence	N/A	1 mo 4 days - #4	8.3 sec
		stage-gsan-batch-manager-deploy	1 mo 4 days - #26	1 mo 3 days - #27	49 sec
		stage-gsan-batch-manager-build	1 mo 3 days - #30	3 mo 5 days - #15	9.2 sec
		production_gsan_online_deploy	1 mo 26 days - #4	1 mo 26 days - #2	14 sec
		production_gsan_online_build	1 mo 26 days - #1	N/A	3 min 6 sec
		production_gsan_cadastro_deploy	1 mo 26 days - #5	1 mo 26 days - #3	12 sec
		production_gsan_cadastro_build	1 mo 26 days - #3	1 mo 26 days - #1	2 min 4 sec
		production-gsan-relatorios-deploy	11 days - #17	2 mo 0 days - #10	50 sec
		production-gsan-relatorios-build	11 days - #11	N/A	8.2 sec
		production-gsan-batch-manager-deploy	1 mo 4 days - #8	2 mo 0 days - #3	13 sec
		production-gsan-batch-manager-build	1 mo 4 days - #5	N/A	8.1 sec
		gsan	1 yr 6 mo - #28	1 yr 6 mo - #30	2 min 8 sec

Icon: [S](#) [M](#) [L](#)

[Legend](#) [RSS for all](#) [RSS for failures](#) [RSS for just latest builds](#)

Jenkins - Projeto

- [Back to Dashboard](#)
- [Status](#)
- [Changes](#)
- [Workspace](#)
- [Build Now](#)
- [Delete Project](#)
- [Configure](#)
- [GitHub](#)
- [Brakeman vulnerability results](#)
- [Rcov report](#)
- [GitHub Hook Log](#)

Project staging_porto_digital_build

- [Rcov report](#)
- [Workspace](#)
- [Recent Changes](#)

Document links

- [Metrics Report](#)

Downstream Projects

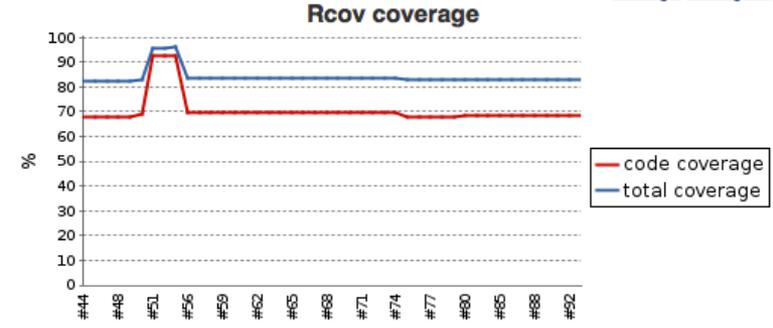
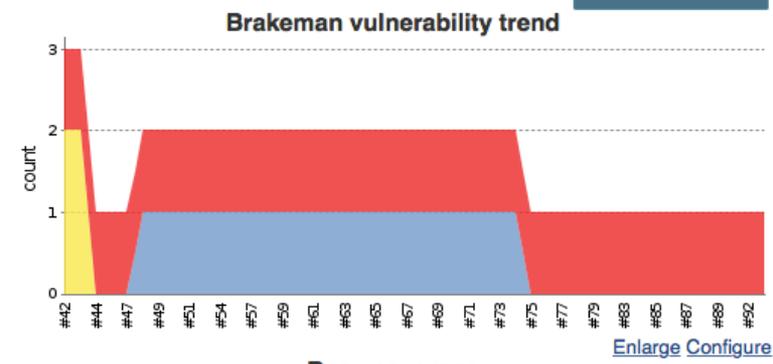
- [staging_porto_digital_deploy](#)

Permalinks

- [Last build \(#93\), 4 hr 15 min ago](#)
- [Last stable build \(#93\), 4 hr 15 min ago](#)
- [Last successful build \(#93\), 4 hr 15 min ago](#)
- [Last failed build \(#91\), 22 hr ago](#)
- [Last unsuccessful build \(#91\), 22 hr ago](#)

Build History	trend
#93 Jul 28, 2015 12:12 PM	
#92 Jul 27, 2015 6:21 PM	
#91 Jul 27, 2015 6:14 PM	
#90 Jul 27, 2015 3:48 PM	
#89 Jul 27, 2015 3:35 PM	
#88 Jul 27, 2015 3:27 PM	
#87 Jul 27, 2015 3:01 PM	
#86 Jul 27, 2015 2:40 PM	

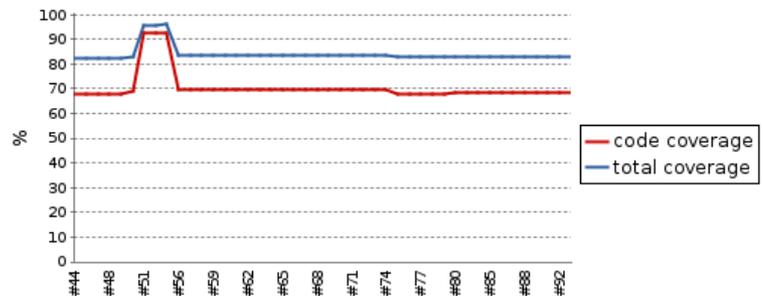
[add description](#)
[Disable Project](#)



Jenkins - Relatórios

- [Back to Project](#)
- [Status](#)
- [Changes](#)
- [Console Output](#)
- [Edit Build Information](#)
- [Delete Build](#)
- [Polling Log](#)
- [Git Build Data](#)
- [No Tags](#)
- [Brakeman vulnerability results](#)
- [Rcov report](#)**
- [Previous Build](#)

Rcov coverage report



Name	Total lines	Lines of code	Total coverage	Code coverage
TOTAL	2271	1223	83.00%	68.44%
app/controllers/application_controller.rb	6	3	100.00%	100.00%
app/controllers/berths_controller.rb	61	26	75.41%	42.31%
app/controllers/curupira/authorized_controller.rb	9	5	88.89%	80.00%
app/controllers/curupira/groups_controller.rb	104	41	76.92%	41.46%
app/controllers/curupira/passwords_controller.rb	46	27	58.70%	29.63%
app/controllers/curupira/permissions_controller.rb	19	9	73.68%	44.44%
app/controllers/curupira/roles_controller.rb	55	28	72.73%	46.43%
app/controllers/curupira/sessions_controller.rb	31	18	77.42%	61.11%
app/controllers/curupira/users_controller.rb	107	46	73.83%	39.13%
app/controllers/harbors_controller.rb	94	46	72.34%	43.48%
app/controllers/home_controller.rb	13	7	92.31%	85.71%
app/controllers/lines_controller.rb	85	43	78.82%	58.14%
app/controllers/moves_controller.rb	22	12	68.18%	41.67%
app/controllers/occupations_controller.rb	17	9	64.71%	33.33%
app/controllers/role_features_controller.rb	5	3	80.00%	66.67%
app/controllers/schedules_canceleds_controller.rb	33	16	72.73%	43.75%
app/controllers/schedules_controller.rb	95	47	67.37%	34.04%

Testes Automatizados

Unitários, Integração, Aceitação e
Exploratórios

Pirâmide de Automação de Teste



Cobertura dos Testes

Name	Total lines	Lines of code	Total coverage	Code coverage
TOTAL	2271	1223	83.00%	68.44%
app/controllers/application_controller.rb	6	3	100.00%	100.00%
app/controllers/berths_controller.rb	61	26	75.41%	42.31%
app/controllers/curupira/authorized_controller.rb	9	5	88.89%	80.00%
app/controllers/curupira/groups_controller.rb	104	41	76.92%	41.46%
app/controllers/curupira/passwords_controller.rb	46	27	58.70%	29.63%
app/controllers/curupira/permissions_controller.rb	19	9	73.68%	44.44%
app/controllers/curupira/roles_controller.rb	55	28	72.73%	46.43%
app/controllers/curupira/sessions_controller.rb	31	18	77.42%	61.11%
app/controllers/curupira/users_controller.rb	107	46	73.83%	39.13%
app/controllers/harbors_controller.rb	94	46	72.34%	43.48%
app/controllers/home_controller.rb	13	7	92.31%	85.71%
app/controllers/lines_controller.rb	85	43	78.82%	58.14%
app/controllers/moves_controller.rb	22	12	68.18%	41.67%
app/controllers/occupations_controller.rb	17	9	64.71%	33.33%
app/controllers/role_features_controller.rb	5	3	80.00%	66.67%
app/controllers/schedules_canceleds_controller.rb	33	16	72.73%	43.75%
app/controllers/schedules_controller.rb	95	47	67.37%	34.04%
app/controllers/schedules_refuseds_controller.rb	33	16	72.73%	43.75%
app/controllers/ships_controller.rb	87	38	74.71%	42.11%
app/controllers/user_roles_management_controller.rb	27	15	100.00%	100.00%
app/helpers/application_helper.rb	33	18	63.64%	33.33%
app/helpers/bootstrap_flash_helper.rb	25	15	52.00%	20.00%
app/helpers/component_helper.rb	56	28	71.43%	42.86%
app/helpers/curupira/relationship_select_options_helper.rb	31	16	74.19%	50.00%
app/helpers/schedule_helper.rb	29	15	75.86%	53.33%
app/helpers/status_helper.rb	21	11	71.43%	45.45%
app/inputs/date_time_picker_input.rb	33	18	63.64%	33.33%
app/models/action_label.rb	3	2	100.00%	100.00%
app/models/authorization.rb	4	3	100.00%	100.00%
app/models/berth.rb	39	25	92.31%	88.00%
app/models/berth_occupation.rb	4	3	100.00%	100.00%
app/models/city.rb	12	8	100.00%	100.00%
app/models/concerns/check_document.rb	43	26	100.00%	100.00%
app/models/concerns/convert_decimal_attributes.rb	19	6	100.00%	100.00%

Cobertura dos Testes

```
12 validates :description, uniqueness: { scope: :harbor_id, message: "Berço já cadastrado neste porto" }
13
14 validate :bollard_range
15 validate :bollards_values, unless: 'final_bollard.blank?'
16
17 private
18
19 def set_bollards
20   Berth.select("initial_bollard, final_bollard").where(harbor_id: harbor_id).where.not(id: id)
21 end
22
23 def bollards_values
24   return if initial_bollard.nil?
25   errors.add(:initial_bollard, "Cabeço inicial não pode ser menor que o final") if initial_bollard >
final_bollard.to_i
26 end
27
28 def bollard_range
29   set_bollards.each do |berth|
30     final_range = final_bollard.blank? ? initial_bollard : final_bollard
31     berth_final_range = berth.final_bollard.blank? ? berth.initial_bollard : berth.final_bollard
32
33     if (berth.initial_bollard..berth_final_range).overlaps? initial_bollard..final_range
34       errors.add(:initial_bollard, "Cabeço inválido")
35       errors.add(:final_bollard, "Cabeço inválido")
36     end
37   end
38 end
39 end
40 end
```

Inspeção de Código Automatizada

Sonar

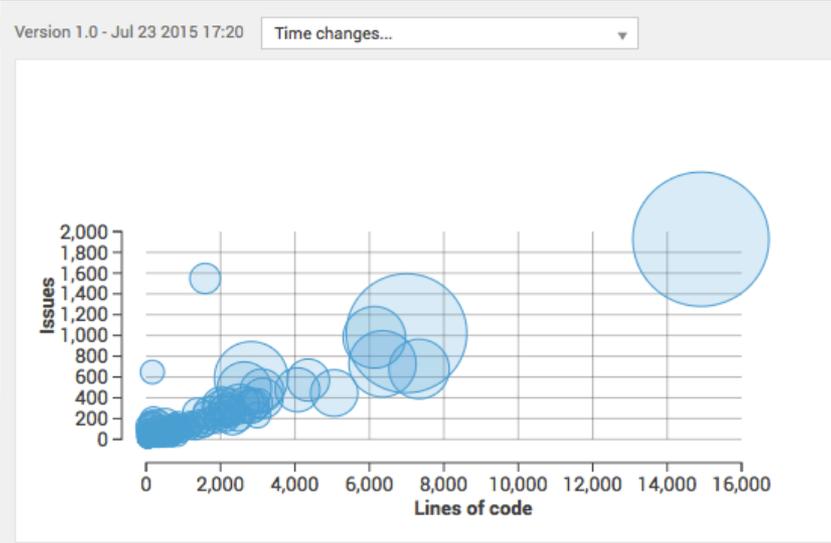
Sonar

PROJECTO_GGAS >

- Dashboard
- Issues
- Time Machine

TOOLS

- Components
- Issues Drilldown
- Design
- Libraries
- Compare



PROJECTO_GGAS ggas
Profiles: GGAS (Java)

SQALE Rating **B** Technical Debt Ratio **14.6%**

Technical Debt **2,642d** ↑ Issues **38,889** ↓

Blocker	3
Critical	149
Major	28,846 ↓
Minor	9,378 ↑
Info	513 ↓

Useless Code
19,381 ↗
19,381 lines in duplications ↗

Lines Of Code 289,977 ↗	Files 1,743
Java	Directories 375
Functions	Lines 603,116 ↗

Directory Tangle Index **7.3%** Dependencies To Cut

Between Directories 179 ↓	Between Files 548 ↗
-------------------------------------	-------------------------------

Cycles **> 1,241** ↑

Most Violated Rules Any severity ▾ [More](#)

Características do Sonar

- Análise da Qualidade do Código
- Gerenciamento do Débito Técnico
- Análise do padrão do código
- Níveis de Complexidade do Código
- Código Duplicado
- Código não usado
- Cobertura de Testes
- Etc...

“São ferramentas que auxiliam o **desenvolvimento distribuído** e agilizam o processo de **análise da qualidade e do produto entregue.**”

Obrigado!

Paulo Igor