



DevOps com Python

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Henrique G. G. Pereira

- Mestre em Computação pela UFSM
- Bacharel em SI pela UNIFRA
- Professor @ UNIFRA
- Analista de TI @ UFSM
- Desenvolvedor Python ~ 6 anos



Roteiro

- Python
- DevOps
- Documentação
- Integração Contínua
- Gestão de Servidores
- Deploy de Aplicações
- Gerenciamento de Erros

Python

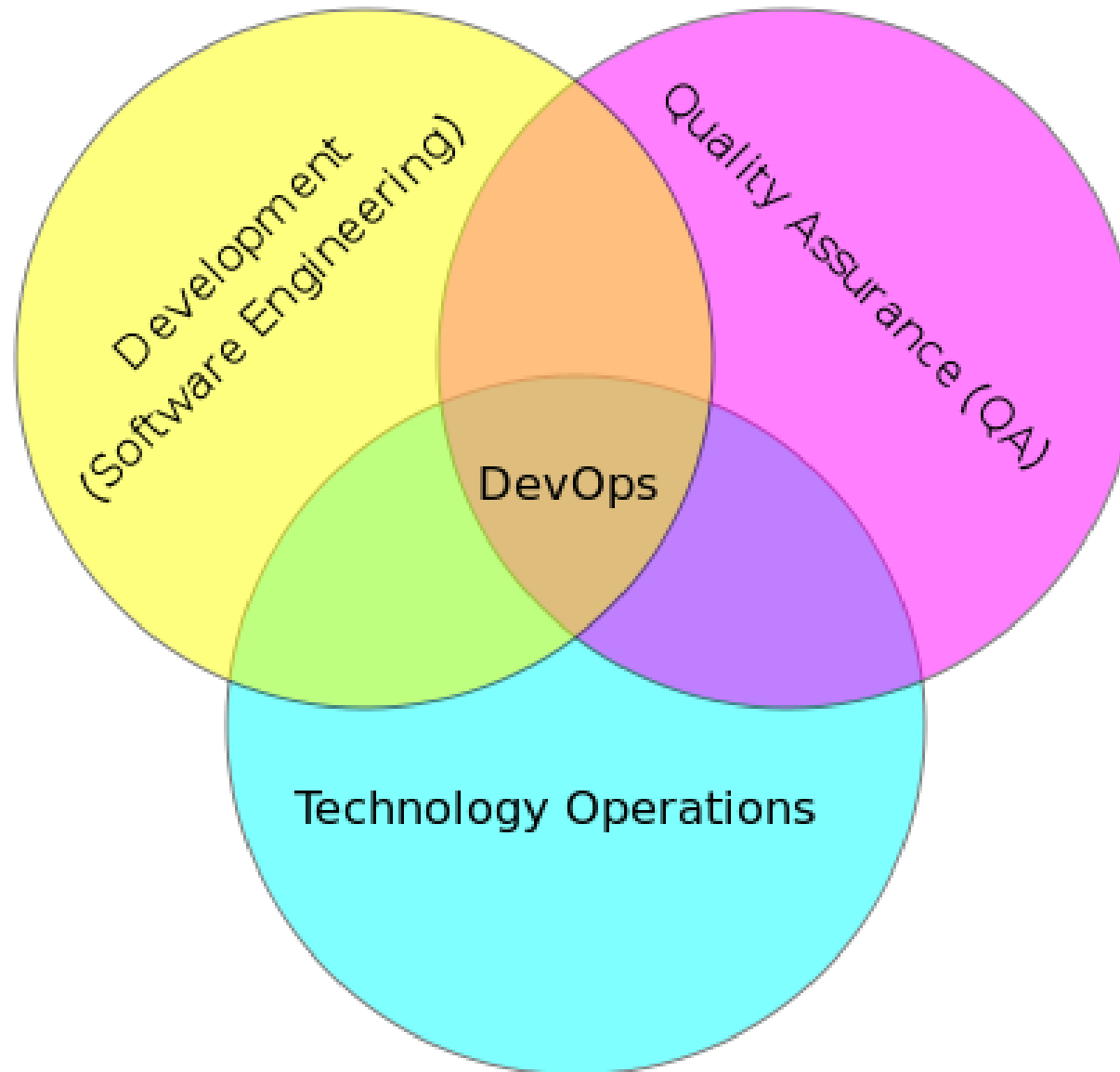
- Linguagem de Programação
 - Propósito Geral
 - Alto Nível
 - Multiparadigma
 - Livre
 - Aberta
- Fácil
- Interpretada



DevOps

- Amálgama entre Desenvolvimento e Operações
 - Combinação de disciplinas que misturam papéis de Desenvolvedores e Administradores de Sistema
 - Objetivo de permitir que uma organização produza software e serviços de forma mais rápida

DevOps



Motivo da Palestra

- Introducional
 - Conceitos
 - Ferramentas
 - Python



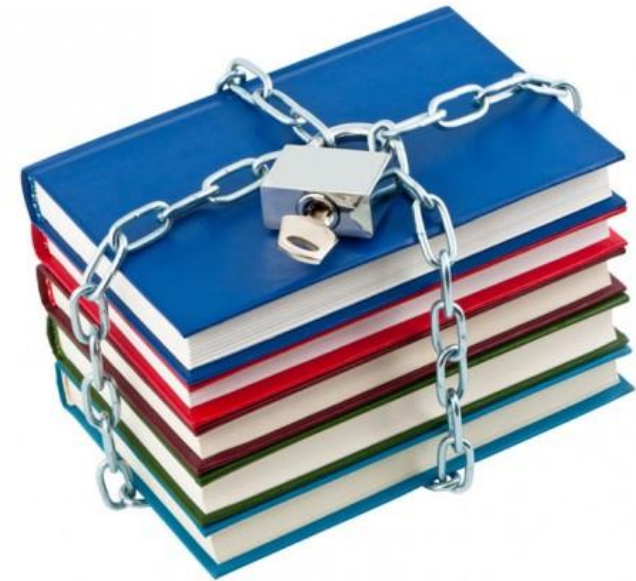
Documentação

- Disciplina Técnica
 - Documentação do Código
 - Interfaces
 - APIs
- Engenharia de Software
 - Garantia de Qualidade (QA)



Documentação - Problemas

- Díficil Padronização
 - Cada um tem a sua
- Díficil Consulta
 - Documentação fica “espalhada”
 - Documentação fica em arquivos Word
 - Documentação fica em uma Wiki



Documentação - Sphinx

- Geração automatizada
 - Introspecção de Código
- Desenvolvida em/para Python
 - C
 - C++
- sphinx-doc.org



Sphinx - Funcionalidades

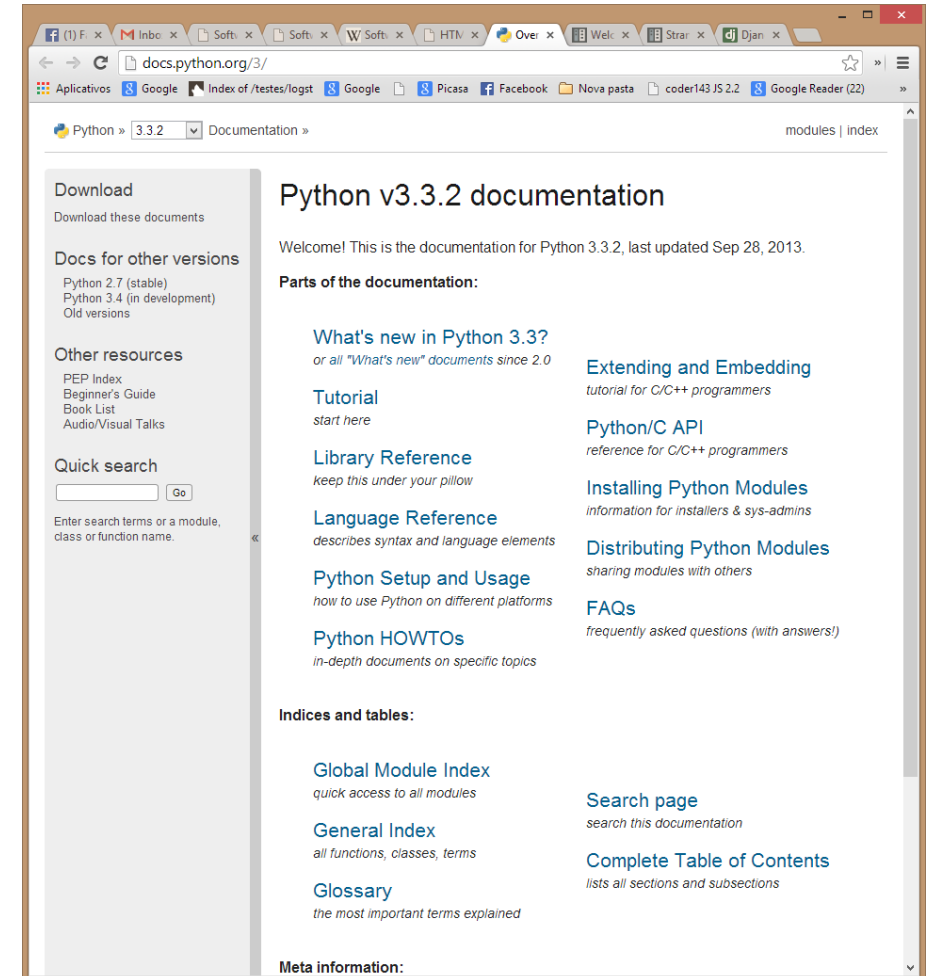
- Múltiplos modelos de output
 - HTML, LaTeX, Formato de Manual, Texto plano
- Cross-Referenciação ativa
- Estrutura Hierárquica
- Coloração de código
- Extensões
- Customizável

Sphinx - Escrevendo

- ReST
 - <http://sphinx-doc.org/rest.html#rst-primer>
- Comentários no código
 - Tipo Javadoc

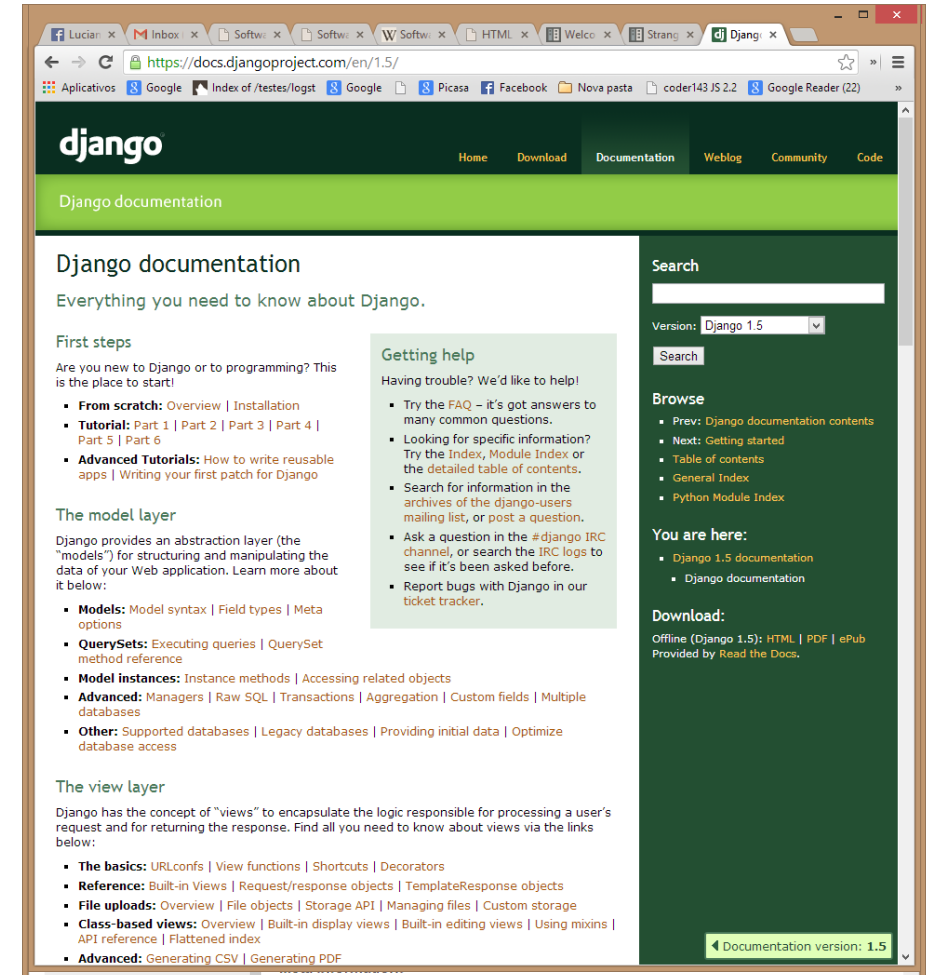
Sphinx – Exemplos

- docs.python.org
- docs.djangoproject.com
- jinja.pocoo.org/docs
- Readthedocs.org
- write-the-docs.readthedocs.org



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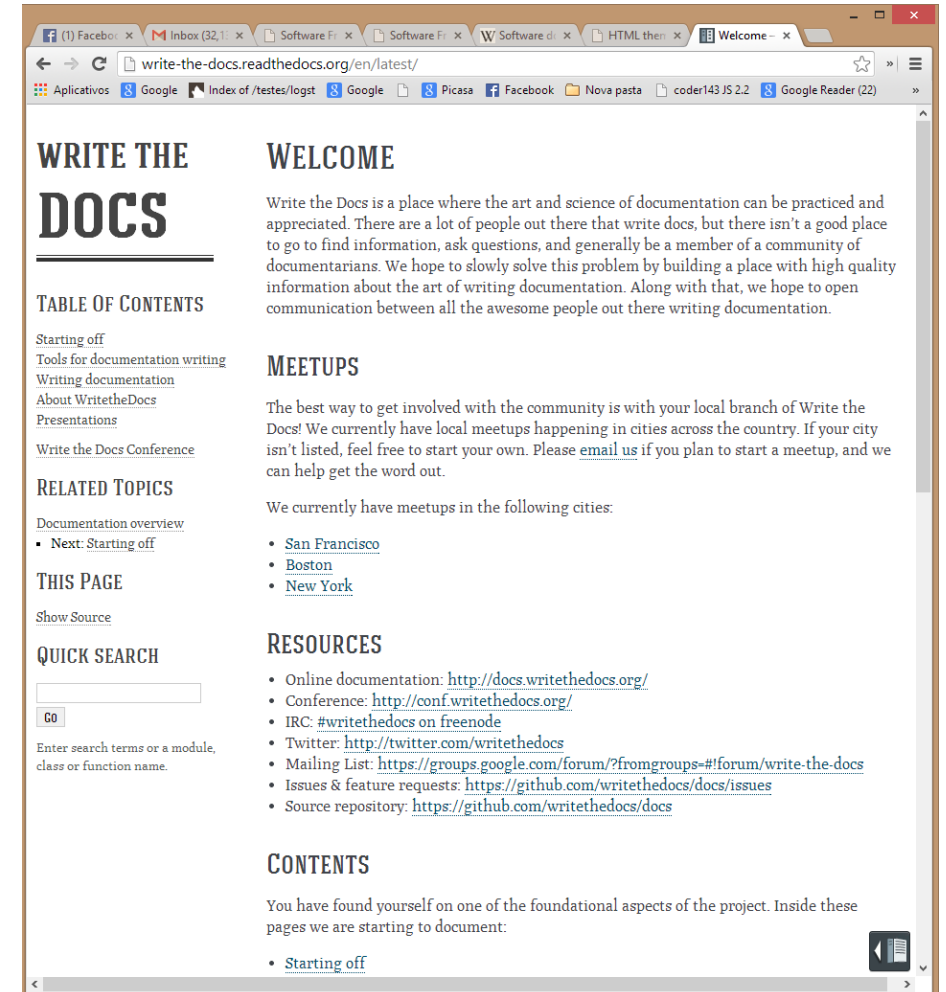
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- docs.djangoproject.com
- jinja.pocoo.org/docs
- Readthedocs.org
- write-the-docs.readthedocs.org



Integração Contínua

- Disciplina da Engenharia de Software
 - eXtreme Programming (XP)
 - TDD
- Prevenir problemas de integração
 - Testes automatizados

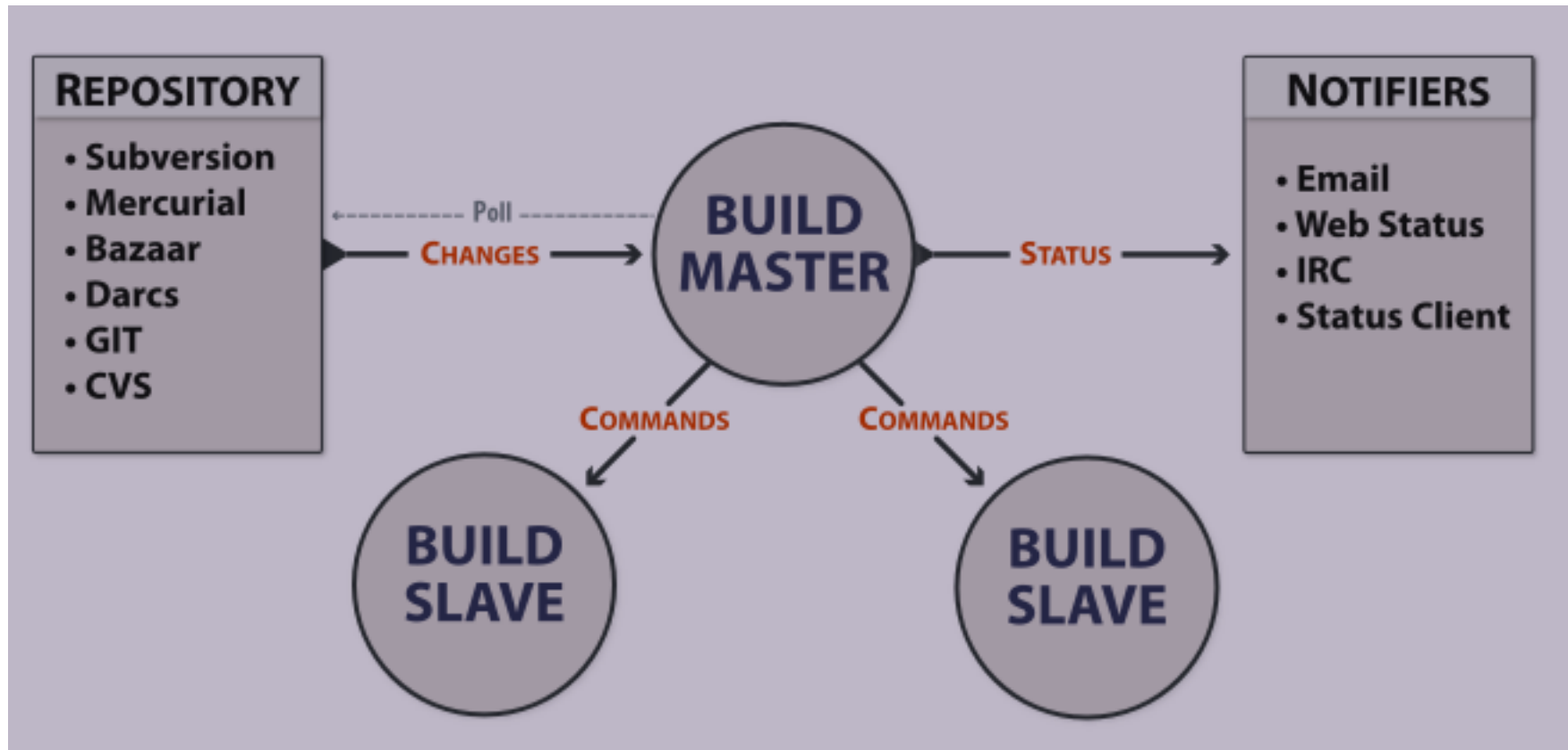


BuildBot

- Integração Contínua
 - Deploy Contínuo
 - Gestão de Entrega
-
- buildbot.net



BuildBot



BuildBot – Quem usa?

- Chromium
- Webkit
- Firefox
- Python

Tree is open

Builds: [continuous](#) | [symbols](#) | [status](#) | [blink status](#)

Dashboards: [perf](#) | [memory](#) | [sizes](#) | [endure](#) | [coverage](#) | [flakiness](#) | [stats](#)

Chromium: [sources](#) | [reviews](#) | [bugs](#) | [dev](#) | [support](#)

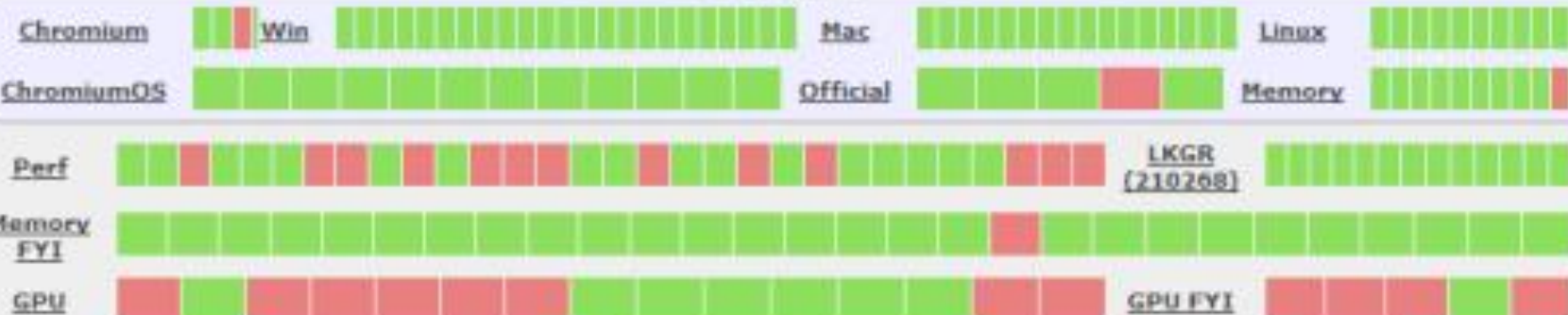
Sheriffs: [rch](#), [sleeve](#), [joi](#), [bruening](#)(Memory), [stichtnot](#)(NaCl), [pasko](#), [rtenneti](#)(Perf), [gabblack](#), [dbasehore](#), [cwolfe](#)(CrOS), [mvanouwerkerk](#), [jdduke](#)(Android), [chenyu](#), [justincohen](#)(iOS), [vangelis](#)(GPU), [trooper](#) [schedule](#)

Gardeners: [vsevik](#)(WebKit), [kevers](#) (ChromeOS)

Masters: [tryserver.chromium](#) | [chromium.fyi](#) | [chromium.memory](#) | [chromium.memory.fyi](#) | [chromium.chromiumos](#) | [chromiumos](#) | [client.nacl](#) | [chromium.webkit](#)

Navigate: [about](#) | [customize](#) | [waterfall](#) | [console](#) | [failures](#)

Tree closers



Chromium last build		Win build successful	Win Split build successful	Mac failed compile	Linux build successful	Linux x64 build successful	Android build successful
current activity		building ETA in ~ 16 mins at 02:19 6 pending	building ETA in ~ 4 mins at 02:06 2 pending	building ETA in ~ 6 hrs 19 mins at 08:22 5 pending	building ETA in ~ 21 mins at 02:23 1 pending	offline 2 pending	building ETA in ~ 4 mins at 02:06 1 pending
PDT	changes	Win	Win Split	Mac	Linux	Linux x64	Android
		compiling stdio	compiling stdio	compiling stdio	compiling stdio		compile stdio
02:02:11					cleanup_temp stdio		
03-01-00					gclient hooks		

Gestão de Servidores

- Disciplina de Infraestrutura
 - Necessário para qualquer organização
- Gerenciamento de Servidores
 - Escolha de pacotes
 - Configuração de rede
 - Tuning de banco de dados



Gestão Manual de Servidores

- Gerenciar Chaves
- Memorizar Senhas
- Conectar no servidor
 - SSH
- Executar uma série de comandos
 - Instalar
 - Configurar
 - Remover



Gestão Manual - Desvantagens

- Impreciso
 - Comandos errados
- Demorado
 - Velocidade depende da pessoa
- Repetitivo
 - Tarefas iguais em servidores diferentes



Deploy Manual de Aplicações

- Gerenciar Chaves
- Memorizar Senhas
- Conectar no servidor
 - SFTP
- Copiar arquivos
 - Drag and Drop

Deploy Manual - Desvantagens

- Impreciso
 - Pasta errada?
- Demorado
 - Velocidade depende da pessoa
- Repetitivo
 - Tarefas iguais em servidores diferentes



Fabric

- Automação de SSH
 - Repetição dos mesmos comandos em vários servidores
- Conjunto básico de operações
 - Ambiente Local
 - Ambiente Remoto
- fabfile.org

Fabric - Exemplo

```
from fabric.api import run, env

env.hosts = ['host1', 'host2', 'host3', 'serv1', 'serv2']

def instalar():
    run('apt-get install apache2-mod_wsgi')
    run('cd /etc/minha/app')
    run('git clone https://github.com/getsentry/sentry.git')

def rodar():
    run('cd /etc/minha/app')
    run('python sentry.py -d 123 -p 928')
```

Fabric - Exemplo

\$ fab instalar rodar

Gerenciamento de Erros

- Disciplina de Manutenção
- Erros de Aplicação
 - Falhas
 - Defeitos
- Controle
- Análise Estatística
 - Diferença entre usar a versão atual e voltar a versão anterior

Gerenciamento de Erros - Manual

- Trabalhar com arquivos de Log
- Buscar informações
- Simular o erro
- Corrigir

Gerenciamento de Erros - Desvantagens

- Arquivos de log
 - grandes
 - sem padrão
 - sem busca
 - sem contexto
 - descentralizados
- Análise estatística
 - Impossível sem ferramentas automatizadas

Sentry

- Plataforma de Monitoramento e Agração
 - Erros
 - Tempo Real
- Seguro
- Contexto Instantâneo
- Fácil Integração
- getsentry.com
- github.com/getsentry/sentry



NoReverseMatch at /intranet/geral/1/todos/minhas_encerradas/

Reverse for 'painel_geral_paginacao' with arguments '(2, u'minhas_encerradas)' and keyword arguments '{}' not found.

Request Method: GET

Request URL: http://sti.cpd.ufsm.br/intranet/geral/1/todos/minhas_encerradas/

Django Version: 1.4.3

Exception Type: NoReverseMatch

Exception Value: Reverse for 'painel_geral_paginacao' with arguments '(2, u'minhas_encerradas)' and keyword arguments '{}' not found.

Exception Location: /var/python-apps/monkeyisland/dj14_virt/lib/python2.7/site-packages/django/template/defaulttags.py in render, line 424

Python Executable: /usr/bin/python

Python Version: 2.7.3

Python Path: ['/var/python-apps/monkeyisland/cham',
'/var/python-apps/monkeyisland/dj14_virt/lib/python2.7/site-packages/pip-1.1-py2.7.egg',
'/var/python-apps/monkeyisland/dj14_virt/lib/python2.7/site-packages/distribute-0.7.3-py2.7.egg',
'/var/python-apps/monkeyisland/dj14_virt/lib/python2.7/site-packages/setuptools-0.9.8-py2.7.egg',
'/var/python-apps/monkeyisland/cham',
'/var/python-apps/monkeyisland/dj14_virt/lib/python2.7/site-packages',
'/usr/local/lib/python2.7/dist-packages/virtualenv-1.10.1-py2.7.egg',
'/usr/lib/python2.7',
'/usr/lib/python2.7/plat-linux2',
'/usr/lib/python2.7/lib-tk',
'/usr/lib/python2.7/lib-old',
'/usr/lib/python2.7/lib-dynload',
'/usr/local/lib/python2.7/dist-packages',
'/usr/lib/python2.7/dist-packages']

Server time: Sex, 27 Set 2013 09:54:36 -0300

Error during template rendering

In template /var/python-apps/monkeyisland/cham/files/template_web/intranet/painel_geral.html, error at line 320

Reverse for 'painel_geral_paginacao' with arguments '(2, u'minhas_encerradas)' and keyword arguments '{}' not found.

310	{% endif %}
311	
312	<li class="active">
313	
314	{{ chamadas.number }}
315	
316	



CAU

Acesso à Informação

BRASIL

A⁻

A

A⁺

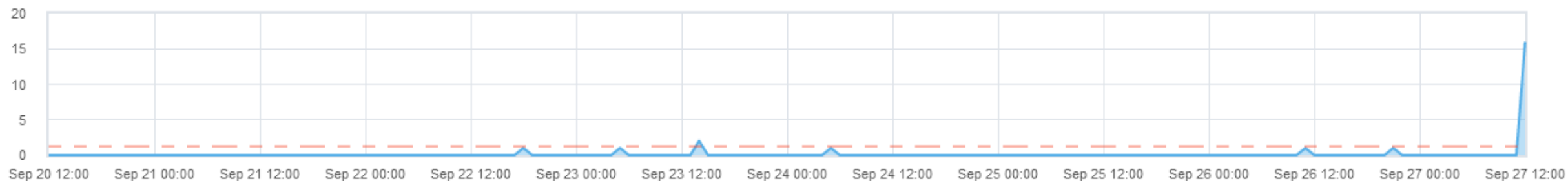
📄 nova

👤 login



Error 500

Erro interno do servidor.



Trends

15 minutes 60 minutes **24 hours**

- 7** **intranet/painel_geral.html**
 NoReverseMatch: Reverse for 'painel_geral_paginacao' with arguments '(...
 6 minutes ago monkeyisland.cpd.ufsm.br root
- 3** **django.template.defaulttags in render**
 NoReverseMatch: Reverse for 'chamadas.views.buscar' with arguments '(...
 10 minutes ago monkeyisland.cpd.ufsm.br root
- 3** **django.template.defaulttags in render**
 NoReverseMatch: Reverse for 'chamadas.views.buscar' with arguments '(...
 10 minutes ago monkeyisland.cpd.ufsm.br root
- 2** **django.db.backends.dummy.base in complain**
 ImproperlyConfigured: settings.DATABASES is improperly configured. Ple...
 9 minutes ago monkeyisland.cpd.ufsm.br root
- 1** **django.db.backends.dummy.base in complain**
 ImproperlyConfigured: settings.DATABASES is improperly configured. Ple...
 9 minutes ago monkeyisland.cpd.ufsm.br root

New Events

15 minutes 60 minutes **24 hours**

- 7** **intranet/painel_geral.html**
 NoReverseMatch: Reverse for 'painel_geral_paginacao' with arguments '(...
 6 minutes ago monkeyisland.cpd.ufsm.br root
- 3** **django.template.defaulttags in render**
 NoReverseMatch: Reverse for 'chamadas.views.buscar' with arguments '(...
 10 minutes ago monkeyisland.cpd.ufsm.br root
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- 1** **django.db.backends.dummy.base in complain**
 ImproperlyConfigured: settings.DATABASES is improperly configured. Ple...
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Stream

Settings

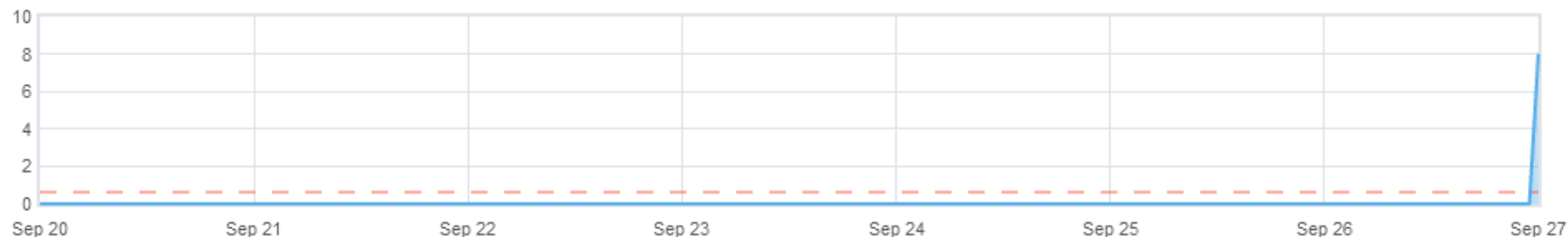
Search query or event ID

8

intranet/painel_geral.html

NoReverseMatch: Reverse for 'painel_geral_paginacao' with arguments '(2, u'minhas_encerradas')' a...

6 minutes ago root



◀ Newer Event

Event at Sept. 27, 2013, 12:54 p.m. UTC [109.0 KB]

Older Event ▶

Tags

Exception

Template

Request

User

Additional Data

Versions

```
NoReverseMatch: Reverse for 'painel_geral_paginacao' with arguments '(2, u'minhas_encerradas')' and keyword arguments '{} ' not found.
```

Tags

site = example.com level = error logger = root server_name = servicicos browser = Chrome 29.0.1547.66 os = Windows

url = http://sti.cpd.ufsm.br/intranet/geral/1/todos/minhas_encerradas/

Exception (most recent call last)

☐ Show 26 hidden frames

Raw

Aggregate

Tags

Similar Events

AGGREGATE DETAILS

Status: Unresolved

First Seen: 3 minutes ago

Last Seen: just now

This event is **not publicly visible**.[Change](#)

ACTIONS

[Mute Event](#)[Remove Event Data](#)

BROWSER

7 [Chrome 29.0.1547.66](#)1 [Firefox 3.5.16](#)

LEVEL

8 [error](#)

LOGGER

8 [root](#)

OS

7 [Windows](#)1 [Linux](#)

No.	Date	Description	Debit	Credit	Balance
1	2023-01-01	Opening Balance			1000.00
2	2023-01-05	Payment to Supplier A	150.00		850.00
3	2023-01-10	Payment to Supplier B	200.00		650.00
4	2023-01-15	Payment to Supplier C	100.00		550.00
5	2023-01-20	Payment to Supplier D	50.00		500.00
6	2023-01-25	Payment to Supplier E	30.00		470.00
7	2023-02-01	Payment to Supplier F	20.00		450.00
8	2023-02-05	Payment to Supplier G	10.00		440.00
9	2023-02-10	Payment to Supplier H	5.00		435.00
10	2023-02-15	Payment to Supplier I	2.50		432.50
11	2023-02-20	Payment to Supplier J	1.25		431.25
12	2023-02-25	Payment to Supplier K	0.625		430.625
13	2023-03-01	Payment to Supplier L	0.3125		430.3125
14	2023-03-05	Payment to Supplier M	0.15625		430.15625
15	2023-03-10	Payment to Supplier N	0.078125		430.078125
16	2023-03-15	Payment to Supplier O	0.0390625		430.0390625
17	2023-03-20	Payment to Supplier P	0.01953125		430.01953125
18	2023-03-25	Payment to Supplier Q	0.009765625		430.009765625
19	2023-04-01	Payment to Supplier R	0.0048828125		430.0048828125
20	2023-04-05	Payment to Supplier S	0.00244140625		430.00244140625
21	2023-04-10	Payment to Supplier T	0.001220703125		430.001220703125
22	2023-04-15	Payment to Supplier U	0.0006103515625		430.0006103515625
23	2023-04-20	Payment to Supplier V	0.00030517578125		430.00030517578125
24	2023-04-25	Payment to Supplier W	0.000152587890625		430.000152587890625
25	2023-05-01	Payment to Supplier X	0.0000762939453125		430.0000762939453125
26	2023-05-05	Payment to Supplier Y	0.00003814697265625		430.00003814697265625
27	2023-05-10	Payment to Supplier Z	0.000019073486328125		430.000019073486328125
28	2023-05-15	Payment to Supplier AA	0.0000095367431640625		430.0000095367431640625
29	2023-05-20	Payment to Supplier AB	0.00000476837158203125		430.00000476837158203125
30	2023-05-25	Payment to Supplier AC	0.000002384185791015625		430.000002384185791015625
31	2023-06-01	Payment to Supplier AD	0.0000011920928955078125		430.0000011920928955078125
32	2023-06-05	Payment to Supplier AE	0.00000059604644775390625		430.00000059604644775390625
33	2023-06-10	Payment to Supplier AF	0.000000298023223876953125		430.000000298023223876953125
34	2023-06-15	Payment to Supplier AG	0.0000001490116119384765625		430.0000001490116119384765625
35	2023-06-20	Payment to Supplier AH	0.00000007450580596923828125		430.00000007450580596923828125
36	2023-06-25	Payment to Supplier AI	0.000000037252902984619140625		430.000000037252902984619140625
37	2023-07-01	Payment to Supplier AJ	0.0000000186264514923095703125		430.0000000186264514923095703125
38	2023-07-05	Payment to Supplier AK	0.00000000931322574615478515625		430.00000000931322574615478515625
39	2023-07-10	Payment to Supplier AL	0.000000004656612873077392578125		430.000000004656612873077392578125
40	2023-07-15	Payment to Supplier AM	0.0000000023283064365386962890625		430.0000000023283064365386962890625
41	2023-07-20	Payment to Supplier AN	0.00000000116415321826934814453125		430.00000000116415321826934814453125
42	2023-07-25	Payment to Supplier AO	0.000000000582076609134674072265625		430.000000000582076609134674072265625
43	2023-08-01	Payment to Supplier AP	0.0000000002910383045673370361328125		430.0000000002910383045673370361328125
44	2023-08-05	Payment to Supplier AQ	0.00000000014551915228366851806640625		430.00000000014551915228366851806640625
45	2023-08-10	Payment to Supplier AR	0.000000000072759576141834259033203125		430.000000000072759576141



Stream

Settings

DETAILS

Settings

Notifications

Tags

API Keys

CLIENT CONFIGURATION

All Platforms

JavaScript

Python

PHP

Ruby

Node.js

Java

INTEGRATIONS

Manage Integrations (5)

Notifications

Events

Sentry will automatically notify you whenever an event is first seen, or its state changes from resolved to unresolved.

Alerts

Alerts are triggered when the rate of events for the entire project increase by a relative amount. Values represent a 60-second interval.

Threshold



Notify when the rate of events increases by this percentage.

Minimum Events

Generate an alert only when an event is seen more than this many times during the interval.

Tags

Tag restrictions are based on your global notification rules. If tags are specified, notifications will be sent when they match any of the restrictions.

Browser

Level

Logger

Os



DETAILS

[Settings](#)[Notifications](#)[Tags](#)[API Keys](#)

CLIENT CONFIGURATION

[All Platforms](#)[JavaScript](#)[Python](#)[PHP](#)[Ruby](#)[Node.js](#)[Java](#)

INTEGRATIONS

[Manage Integrations \(5\)](#)

Client Configuration

To start sending events, configure your client with the following DSN value:

```
http://ccce72838d0a4af8859c7fe1f138fd8e:661f9aad0ed6413192a82b616182a31c@sentry.cpd.ufsm.br/3
```

If this is a client that only needs public access (like [raven-js](#)), you can use the following public DSN:

```
http://ccce72838d0a4af8859c7fe1f138fd8e@sentry.cpd.ufsm.br/3
```

Platforms



Python



PHP



Ruby



JavaScript



Java



Node.js



iOS

Frameworks



Rails 3



Rails 4



Django

More Clients

- [C#](#)
- [R Project](#)

For more information on developing clients and the Sentry API, see the [documentation](#).



DETAILS

[Settings](#)[Notifications](#)[Tags](#)[API Keys](#)

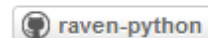
CLIENT CONFIGURATION

[All Platforms](#)[JavaScript](#)[Python](#)[PHP](#)[Ruby](#)[Node.js](#)[Java](#)

INTEGRATIONS

[Manage Integrations \(5\)](#)

Configuring Django (Python)

[Python](#)[Django](#)[Flask](#)[Tornado](#)

Start by installing [raven-python](#):

```
pip install raven
```

Then simply modify your Django configuration:

```
# Set your DSN value
RAVEN_CONFIG = {
    'dsn': 'http://ccce72838d0a4af8859c7fe1f138fd8e:661f9aad0ed6413192a82b616182a31c@sentry.cpd.ufsm.br/3',
}

# Add raven to the list of installed apps
INSTALLED_APPS = INSTALLED_APPS + (
    # ...
    'raven.contrib.django.raven_compat',
)
```

That's it! Raven automatically installs an error handling hook to pipe all uncaught exceptions to Sentry.

If you wish to test your connection to the server, you can use the raven test command:

```
python manage.py raven test
```

For more information on other uses of Raven with Python, please see the [official documentation for raven-python](#)

Dúvidas?

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- fb.com/ikkebr

