Otimizando sistemas em Python com Kibana, Elasticsearch e APM

Stoodi

Sobre o palestrante

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Chapter Lead de
Desenvolvimento

in/brunogomesfranca/

Stoodi

Fundada em 2013 em São Paulo, somos uma plataforma de educação online que ajuda estudantes do Brasil inteiro a alcançarem seu sonho de cursar o ensino superior. Com um time de mais de 100 pessoas, e crescendo, integramos o grupo Cogna, o maior grupo de educação privada do mundo.

Por que os alunos amam o Stoodi?

MAIS DE 5 MIL VIDEOAULAS

PLANO DE ESTUDOS

CORREÇÃO DE REDAÇÃO

SIMULADOS COM RELATÓRIO DE DESEMPENHO

MAIS DE 30 MIL EXERCÍCIOS

AULAS AO VIVO

TIRE DÚVIDAS

O que já fizemos

28 milhões

de visitantes

100 mil

exercícios resolvidos diariamente

3 milhões

de alunos impactados

50 mil

vídeos assistidos todos os dias

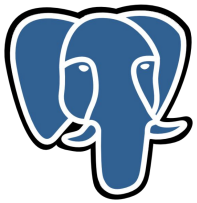
Estamos contratando!

- **Pessoa Desenvolvedora Python**
- **Pessoa Desenvolvedora Front End**
- **Pessoa Desenvolvedora Mobile**
- **DevOps**
- **Chapter Lead Mobile**

Mais vagas e inscrições em

https://www.stoodi.com.br/trabalhe-conosco

Nossa Stack



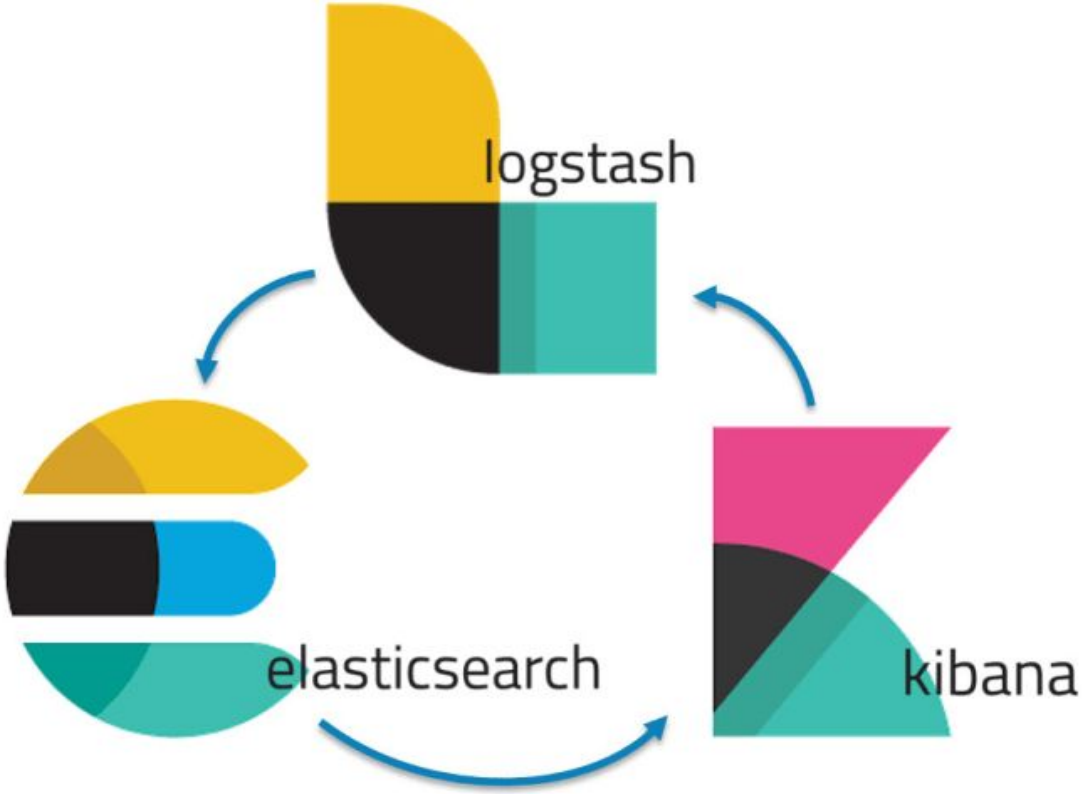
PostgreSQL

elasticsearch

DynamoDB

E mais...

Monitoria, quase um...



Stack de Monitoria

Elasticsearch - Engine de pesquisa e análise.

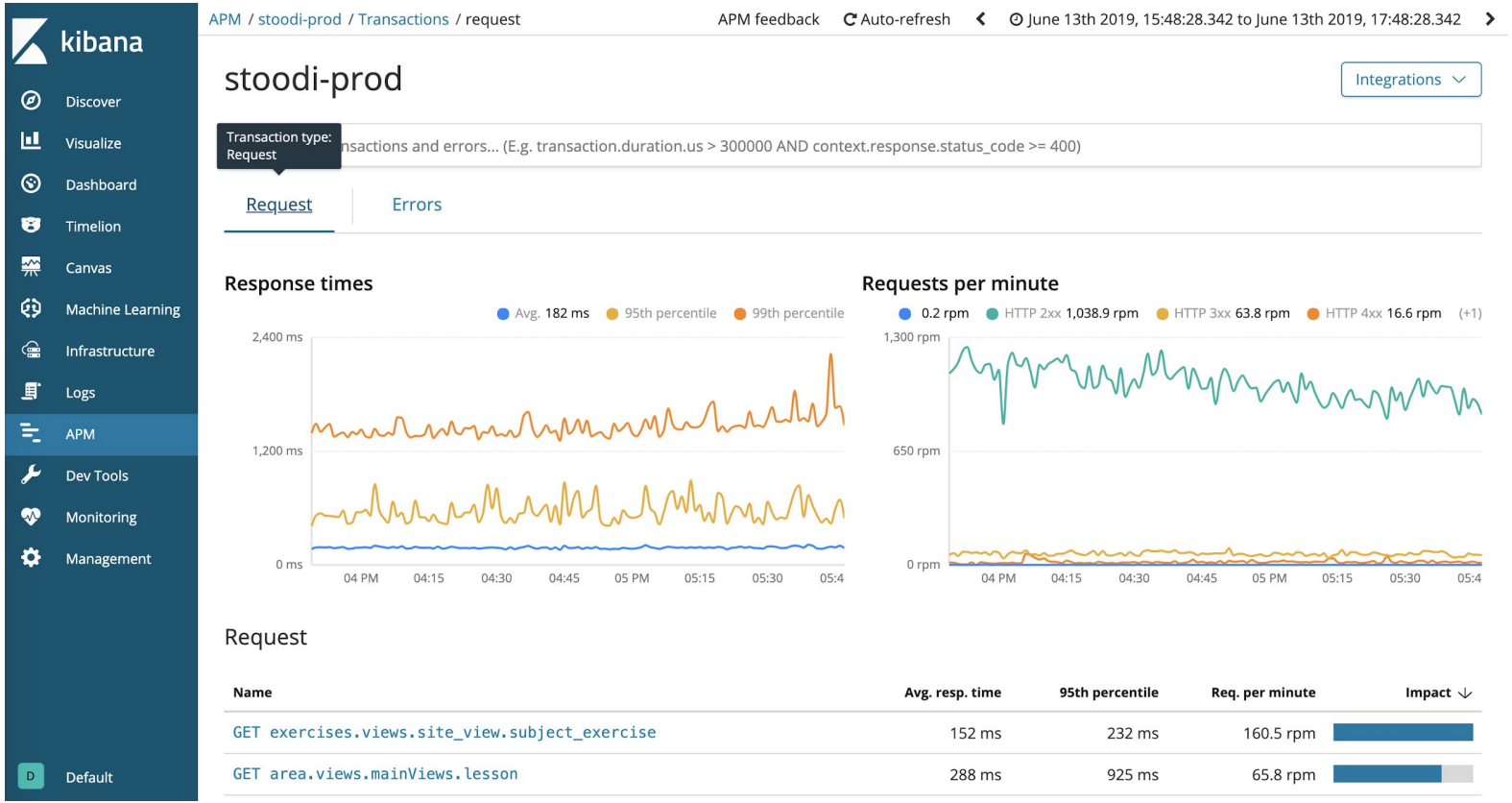
Kibana - Interface visual para acesso aos dados do Elasticsearch.

APM - Monitoramento de desempenho de aplicações (Application Performance Monitoring).

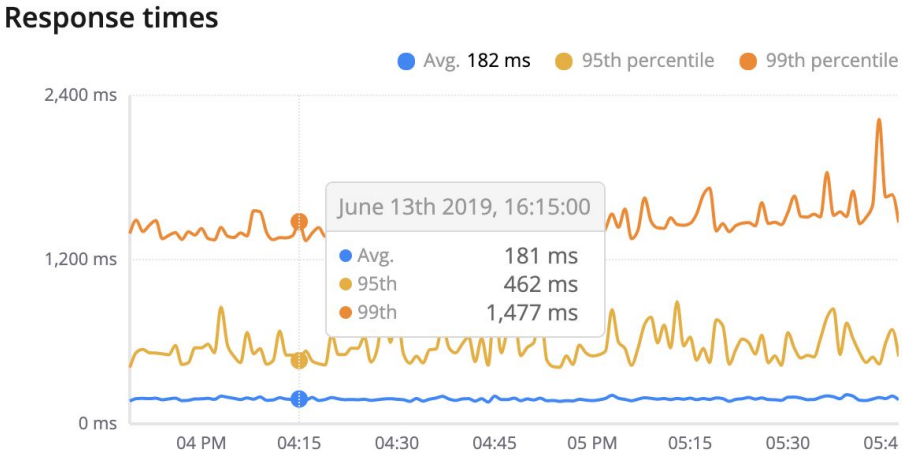
E agora?

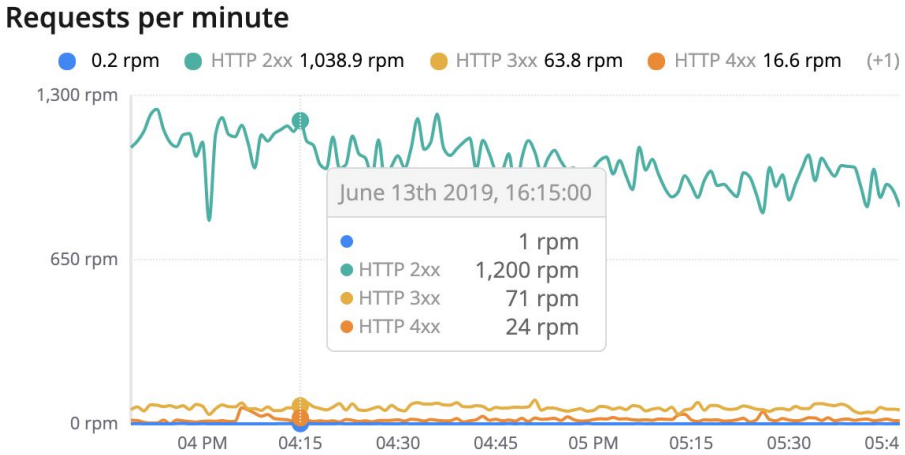
Ok, mas e como isso funciona?

Kibana


kibana
Discover
Visualize
Dashboard
Timelion
Canvas
Machine Learning
Infrastructure
Logs
APM
Dev Tools
Monitoring
Management
Default
APM / stoodi-prod / Transactions / request
APM feedback
Auto-refresh
June 13th 2019, 15:48:28.342 to June 13th 2019, 17:48:28.342
stoodi-prod
Integrations
Transaction type: Request
nsactions and errors... (E.g. transaction.duration.us > 300000 AND context.response.status_code >= 400)
Request
Errors
Response times
Avg. 182 ms
95th percentile
99th percentile
2,400 ms
1,200 ms
0 ms
04 PM
04:15
04:30
04:45
05 PM
05:15
05:30
05:4
Requests per minute
0.2 rpm
HTTP 2xx 1,038.9 rpm
HTTP 3xx 63.8 rpm
HTTP 4xx 16.6 rpm
(+1)
1,300 rpm
650 rpm
0 rpm
Request
Name
Avg. resp. time
95th percentile
Req. per minute
Impact
GET exercises.views.site_view.subject_exercise
152 ms
232 ms
160.5 rpm
GET area.views.mainViews.lesson
288 ms
925 ms
65.8 rpm

Kibana - Gráficos





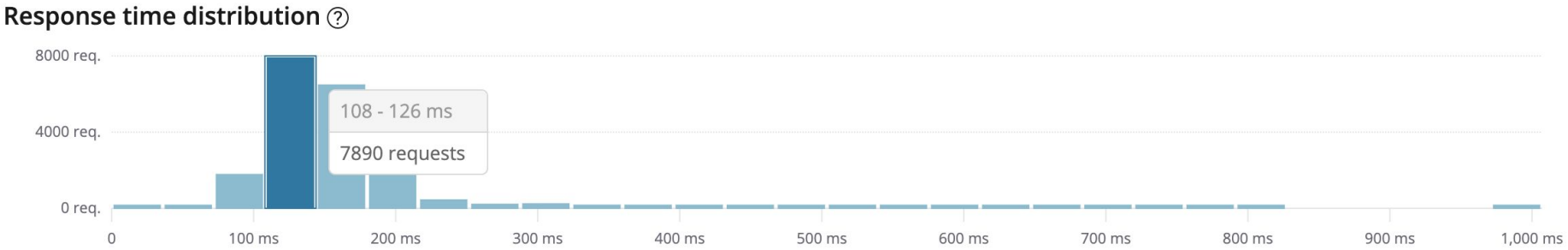
Kibana - Lista de Endpoints

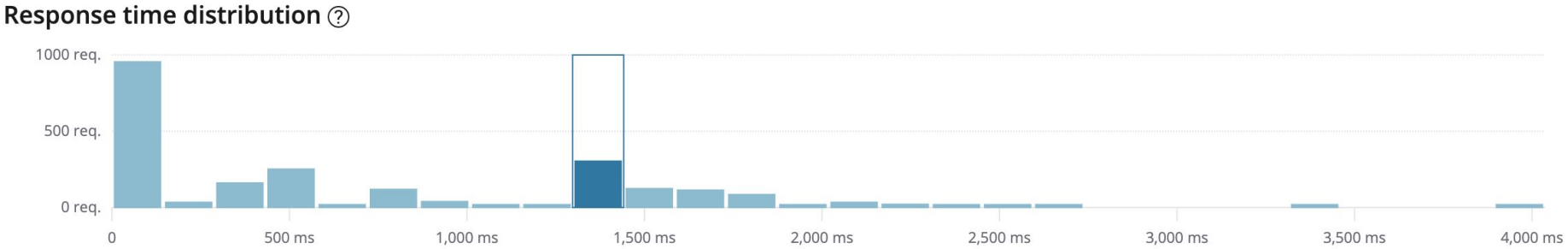
Request

Name	Avg. resp. time	95th percentile	Req. per minute	Impact ↓
GET exercises.views.site_view.subject_exercise	152 ms	232 ms	160.5 rpm	
GET area.views.mainViews.lesson	288 ms	925 ms	65.8 rpm	
GET exercises.views.site_view.video_modal	1,100 ms	2,301 ms	15.9 rpm	
POST area.views.mainViews.can_watch_this_video	266 ms	1,392 ms	59.3 rpm	
GET video.views.siteView.video	676 ms	1,799 ms	19.3 rpm	
GET main_page.views.generalViews.index	173 ms	294 ms	52.0 rpm	
GET exercises.views.site_view.subject_exercise_list	177 ms	272 ms	50.3 rpm	
GET subjectPanel.views.areas	233 ms	492 ms	31.7 rpm	
GET area.views.mainViews.lesson_exercise	187 ms	299 ms	37.5 rpm	
GET exercises.views.site_view.exercise	116 ms	171 ms	59.5 rpm	
GET subjectPanel.views.area	252 ms	399 ms	24.9 rpm	

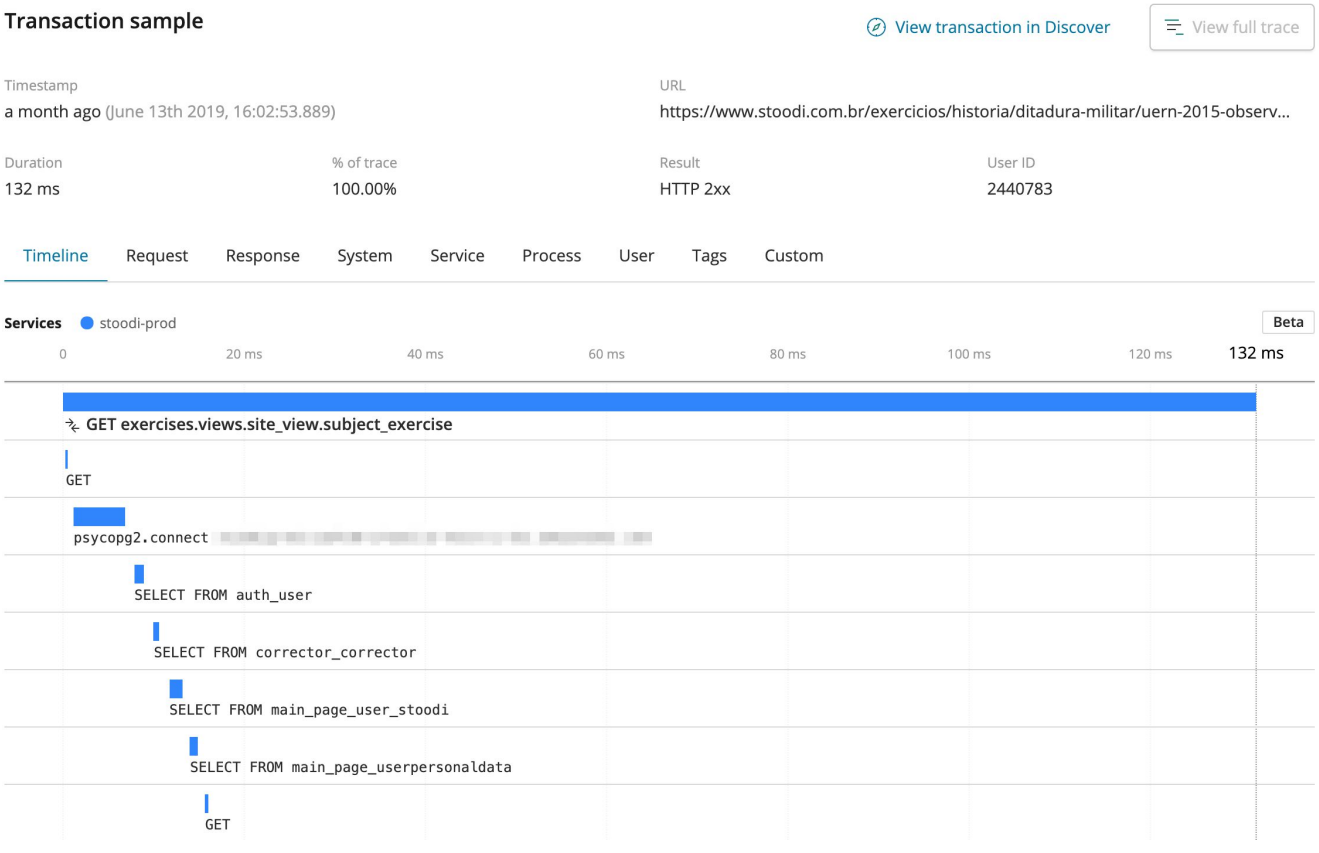
Kibana - Detalhes Endpoint

Kibana - Response time distribution

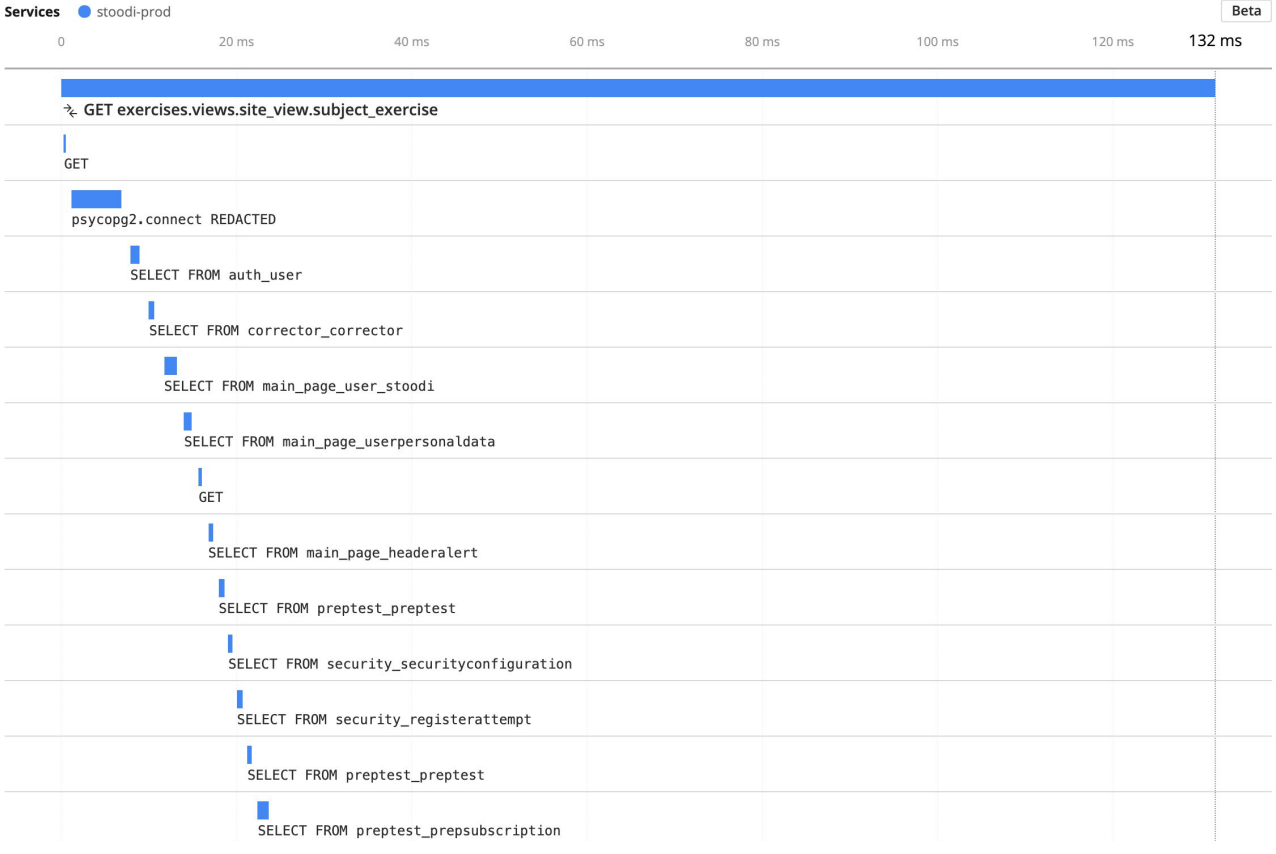




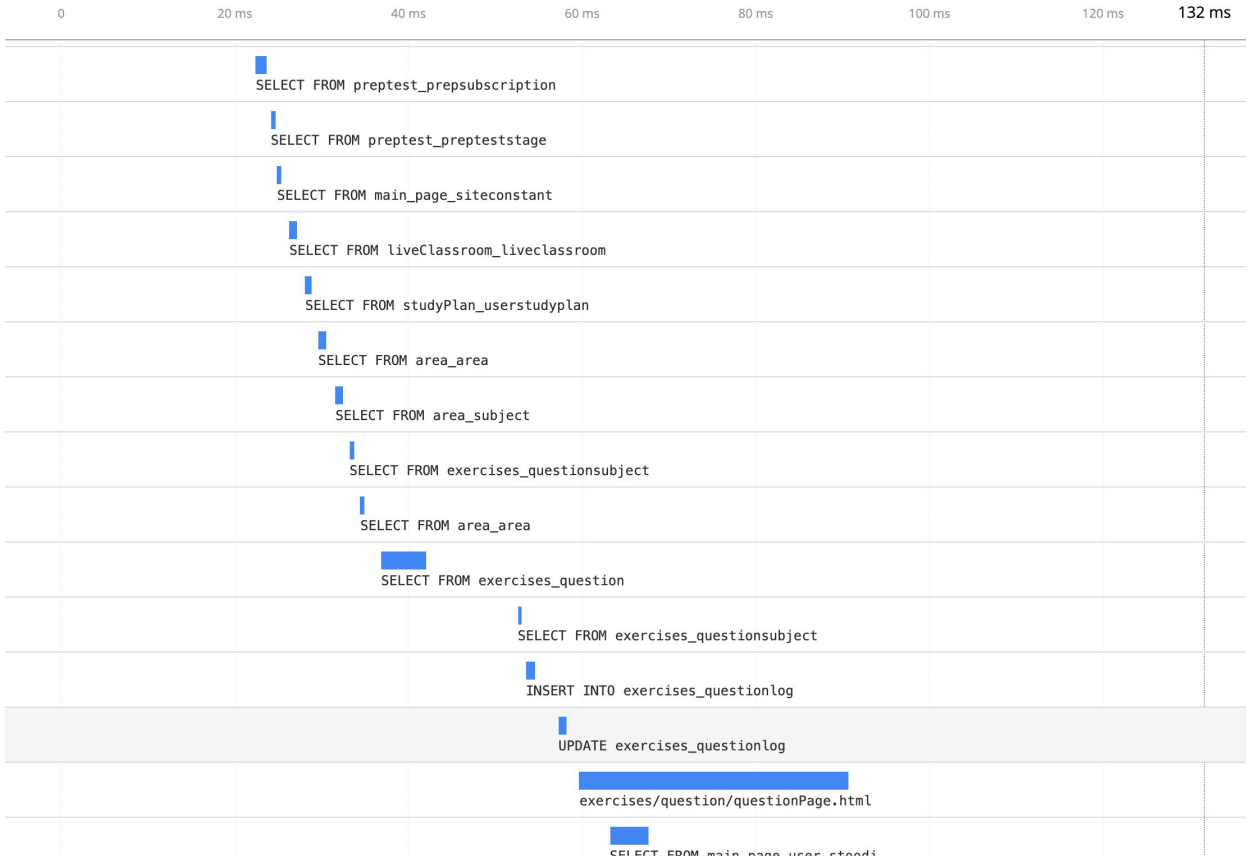
Kibana - Transaction Sample



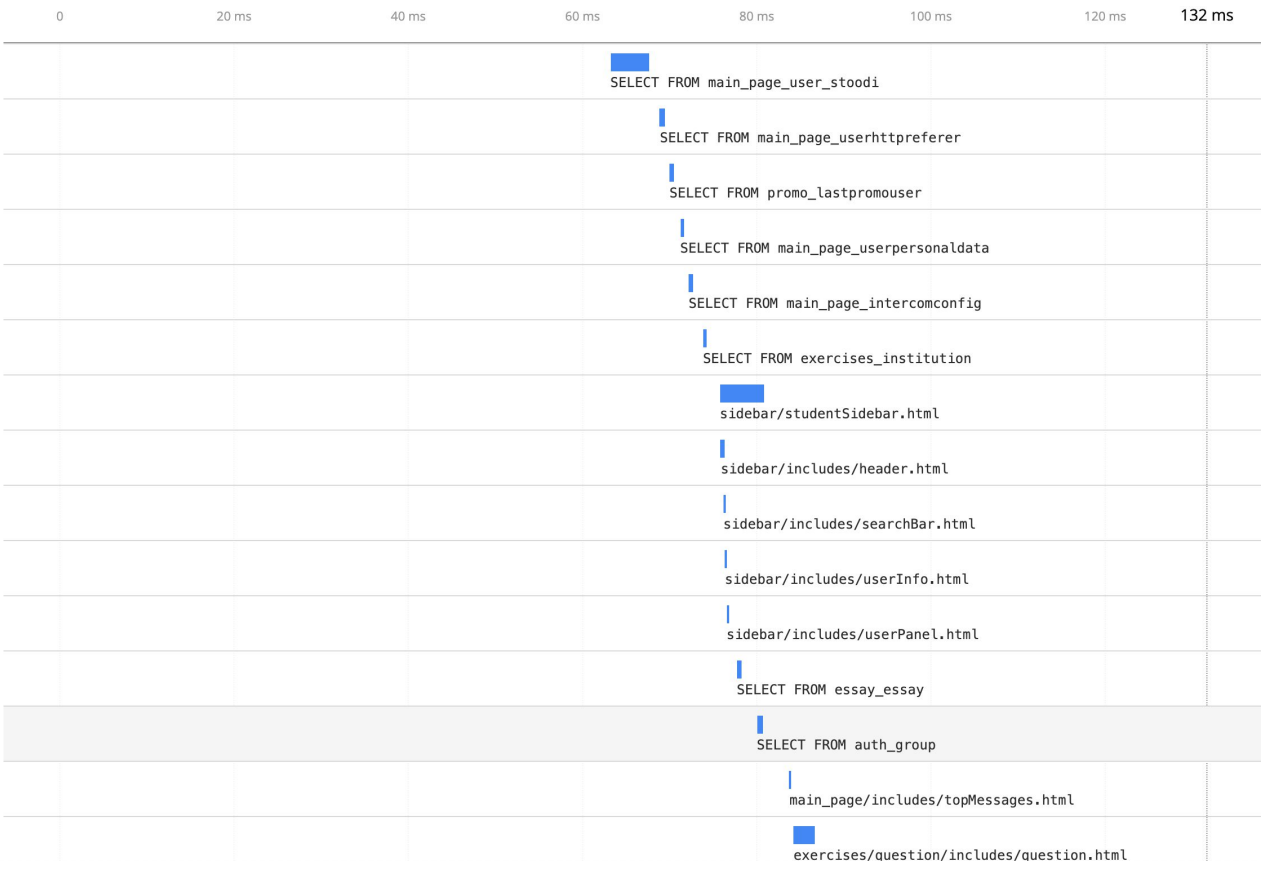
Kibana - Timeline



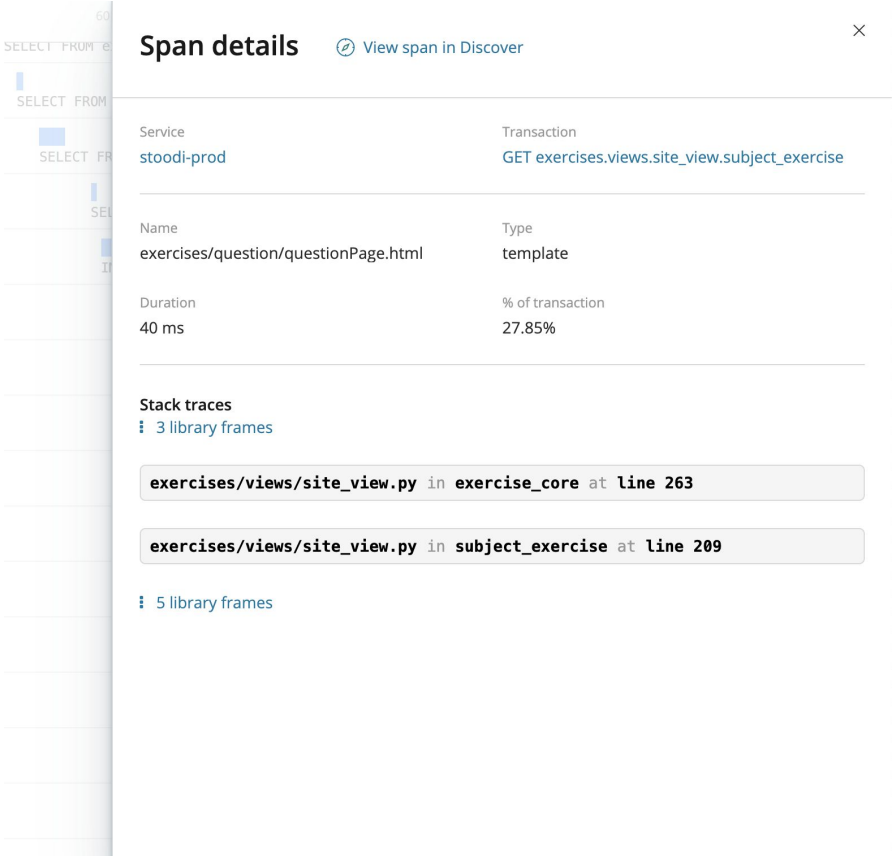
Kibana - Timeline



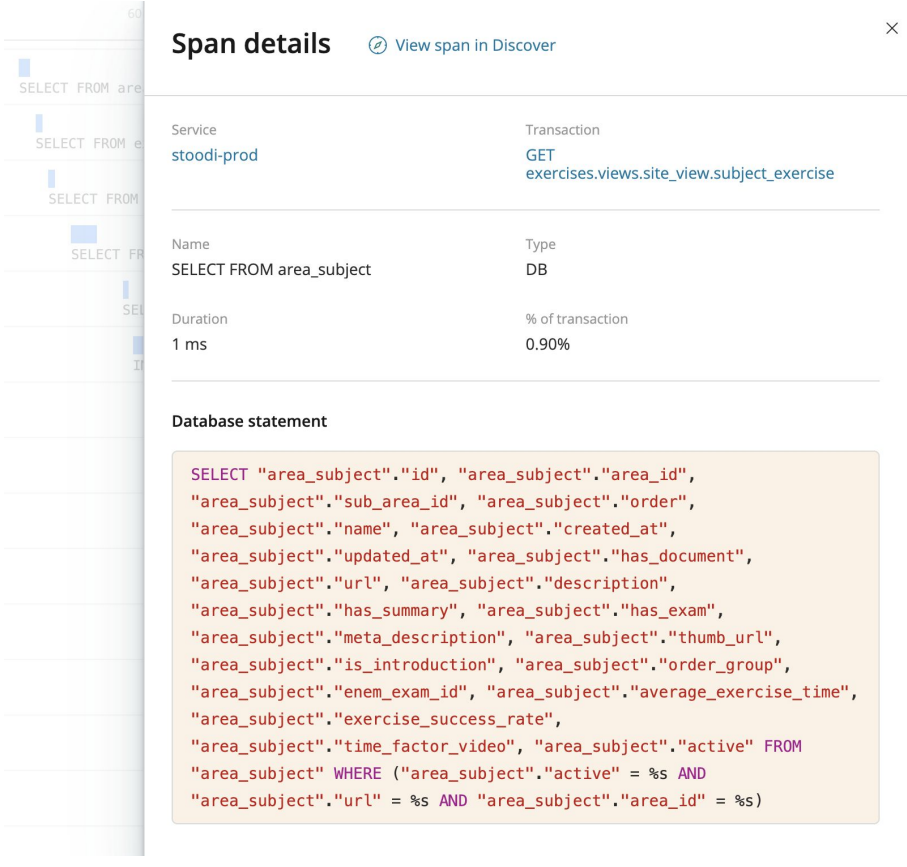
Kibana - Timeline



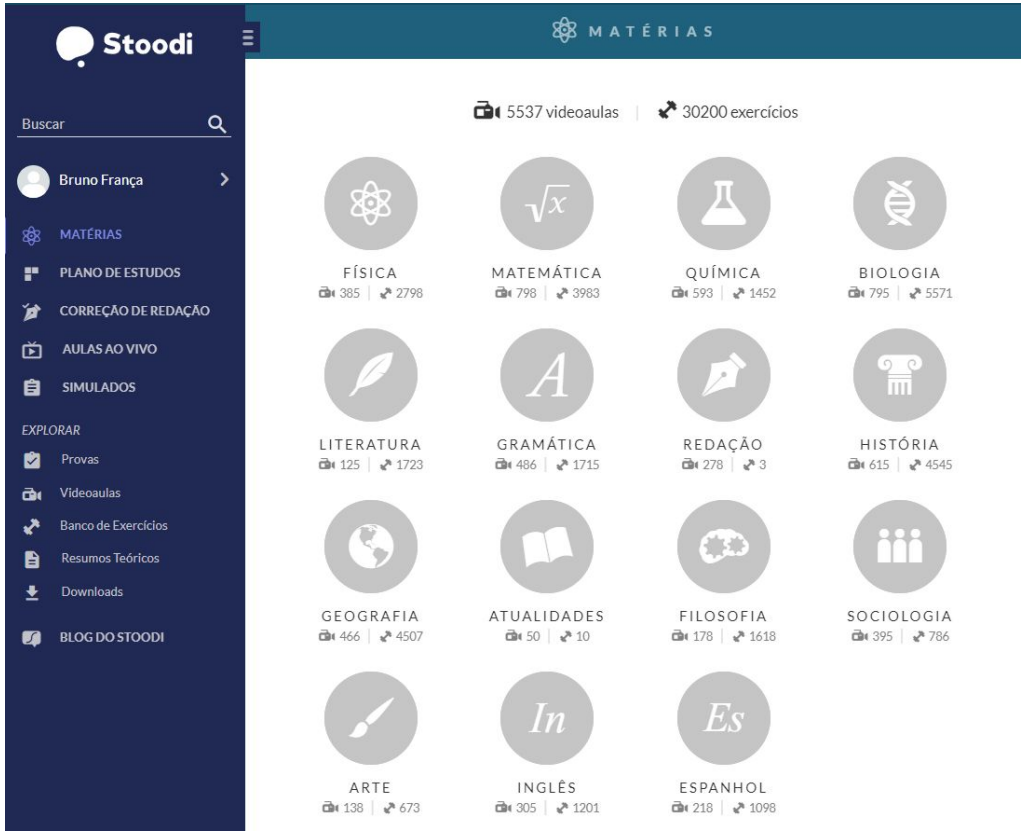
Kibana - Span Details



Kibana - Span Details



Exemplos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LITERATURA 125 1723
GRAMÁTICA 486 1715
REDAÇÃO 278 3
HISTÓRIA 615 4545
GEOGRAFIA 466 4507
ATUALIDADES 50 10
FILOSOFIA 178 1618
SOCIOLOGIA 395 786
ARTE 138 673
INGLÊS 305 1201
ESPANHOL 218 1098

Exemplos

Antes

GET exercises.views.site_view.subject_exercise_pdf_list	3,826 ms	11,359 ms	3.6 rpm
GET summary.views.siteView.DownloadSummaryPDF	6,992 ms	43,559 ms	2.7 rpm

Depois

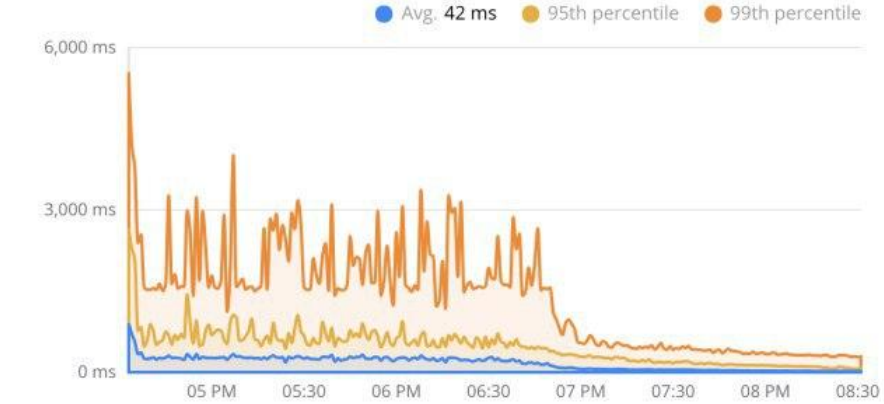
GET exercises.views.site_view.subject_exercise_pdf_list	1,098 ms	8,028 ms	1.8 rpm
GET summary.views.siteView.DownloadSummaryPDF	139 ms	199 ms	1.4 rpm

Exemplos

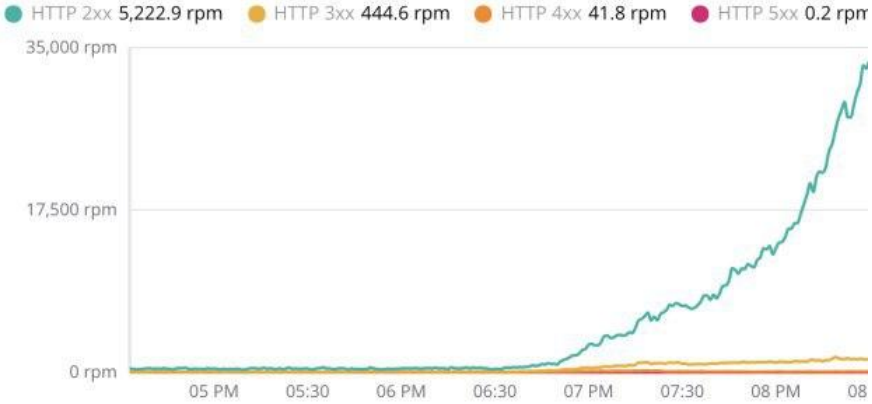
stoodi-prod

Request | Errors

Response times



Requests per minute



Request

O que preciso?

Elasticsearch

https://www.elastic.co/guide/en/elasticsearch/reference/current/getting-started-install.html

Kibana

https://www.elastic.co/guide/en/kibana/4.6/setup.html

APM

https://www.elastic.co/guide/en/apm/get-started/6.5/install-and-run.html

Como faço no meu projeto Django?

```
$ pip install elastic-apm
```

```
INSTALLED_APPS = (
    # ...
    'elasticapm.contrib.django',
)

ELASTIC_APM = {
    'SERVICE_NAME': '<SERVICE-NAME>',
    'SECRET_TOKEN': '<SECRET-TOKEN>',
}

MIDDLEWARE = (
     'elasticapm.contrib.django.middleware.TracingMiddleware',
     # ...
)
```

E no lambda?

https://github.com/UnitedIncome/serverless-python-requirements

```
$ pip install elastic-apm
```

E no lambda?

```python
import functools
import elasticapm

name = 'serverless_apm'


def get_apm_client():
    elasticapm.instrument()
    return elasticapm.Client()
```

```python
def apm_report(func):
    @functools.wraps(func)
    def execute(event, context):
        apm = get_apm_client()
        apm.begin_transaction('Request')
        elasticapm.set_custom_context({'event': event})

        try:
            result = func(event, context)
        except Exception:
            apm.capture_exception()
            raise
        finally:
            apm.end_transaction(func.__name__)
            apm.close()
            elasticapm.uninstrument()

        return result

    return execute
```

E no lambda?

```python
from serverless_apm import apm_report


@apm_report
def index(event, context):
    body = {
        'message': 'Olá mundo!'
    }

    return {
        'body': json.dumps(body),
        'statusCode': status_code,
        'headers': default_headers,
    }
```

Fique Atento!

Auto Scale - Escalamos nossas instâncias de APM e Elasticsearch

Rotação de logs - Fazemos a nossa a cada ~ 4 meses

Quantidade de dados gerados - 60 Gb de dados por dia

É isso...

Obrigado!