

Server-Side Rendering e Universal Apps

com Vue.js e Nuxt.js



THE
DEVELOPER'S
CONFERENCE

Erick Petrucelli



Tecnólogo em Processamento de Dados

MBA em Gestão de Tecnologia da Informação

Mestre em Engenharia de Produção

Fatec
Taquaritinga

 **Sistemas
para Internet**
Fatec Taquaritinga


BRASIL

+ de **20 anos** em desenvolvimento *Web*
Adepto de *full-stack* JavaScript desde 2012

Adepto do **Vue** desde 2015 (v. 0.12.11)

Community Partner do vuejs.org

Você já viu
o **Vue**?





O Framework JavaScript Progressivo

[▶ POR QUE VUE?](#)[COMEÇAR](#)[GITHUB](#)

Patrocinador Especial



Construa APIs em minutos ao invés de dias, gratuitamente.

Acessível

Já conhece HTML, CSS e JavaScript? Leia o guia e comece a criar aplicações sem perder tempo!

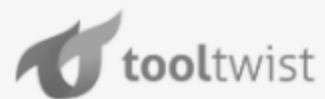
Versátil

Ecossistema com adoção incremental, escala de uma simples biblioteca a um *framework* completo.

Performático

20KB min+gzip Runtime
Virtual DOM Incrivelmente Rápido
Esforço Mínimo para Otimizações

Patrocínio no Patreon



```
<script src="https://unpkg.com/vue/dist/vue.js"></script>
<script>
new Vue({
  el: '#app',
  data: {
    text: '',
    tasks: []
  },
  methods: {
    insert () {
      if (this.text) {
        this.tasks.push(this.text)
        this.text = ''
      }
    }
  }
})
</script>
```

```
<div id="app">
  <h1>Tarefas</h1>
  <form @submit.prevent="insert">
    <input placeholder="O que deve ser feito?" v-model="text">
    <button>Inserir</button>
  </form>
  <ul>
    <li v-for="task of tasks">{{ task }}</li>
  </ul>
</div>
```

Isso é só o começo:

**Vue CLI, Vue Router,
Vuex, Single-File
Components...**

- Dashboard
- Plugins
- Dependencies
- Configuration
- Tasks

🔍

- serve** Running
- build Compiles and minifies for p...
- inspect Inspect the resolved webpa...

serve Compiles and hot-reloads for development

vue-cli-service serve

■ Stop task
⚙ Parameters
🔗

🗨 Output
📊 Dashboard
🔄 Analyzer

📊 Dashboard
🔗 Open app
Parsed
?

Status: **Success**

Errors: **0**

Warnings: **0**

Assets: **2.0MB** (Parsed)

Modules: **676.0kB** (Parsed)

Dependencies: **639.0kB** 94.53%



Idle (169ms)

Speed stats

Global Average	2.35s	Mobile Edge	68.4s	2G	58.71s	3G Slow	40.94s	3G Basic	10.43s
3G Fast	10.28s	4G	1.97s	LTE	1.42s	Dial Up	324.41s	DSL	10.86s
Cable	3.27s	FIOS	0.81s						

Assets

	Parsed	Global	3G Slow	3G Fast
app.js	1.9MB	2.23s	38.83s	9.76s 
0.js	92.3kB	0.13s	2.2s	0.6s
1.js	12.3kB	0.04s	0.64s	0.21s

Dependencies

vue	221.8kB	
sockjs-client	180.5kB	
vue-router	66.5kB	
html-entities	57.4kB	


```
<template>
  <div class="home">
    <h1>Tarefas</h1>
    <task-insert @inserted="inserted"/>
    <task-list :tasks="tasks"/>
  </div>
</template>

<script>
import TaskInsert from '../components/TaskInsert.vue'
import TaskList from '../components/TaskList.vue'

export default {
  components: { TaskInsert, TaskList },
  data () { return { tasks: [] } },
  methods: { inserted (text) { this.tasks.push(text) } }
}
</script>

<style scoped>
h1 { color: #20a068; }
</style>
```

Então, por que
este assunto?

“Teria sido melhor ir
ver o filme do Pelé”?

(Chaves, 1979)



Sensação de
desconforto
com **SPA's**...



O que é
**Single-Page
Application?**

HTML mínimo
desde a primeira requisição,
elementos injetados
por *script* no **cliente**

```
1 <!DOCTYPE html>
2 <html lang="en">
3   <head>
4     <meta charset="utf-8">
5     <meta http-equiv="X-UA-Compatible" content="IE=edge">
6     <meta name="viewport" content="width=device-width,initial-scale=1.0">
7     <link rel="icon" href="/favicon.ico">
8     <title>spa</title>
9 <link href="/0.js" rel="prefetch"><link href="/1.js" rel="prefetch"><link href="/app.js" rel="preload" as="script"></head>
10 <body>
11   <noscript>
12     <strong>We're sorry but spa doesn't work properly without JavaScript enabled. Please enable it to continue.</strong>
13   </noscript>
14   <div id="app"></div>
15   <!-- built files will be auto injected -->
16   <script type="text/javascript" src="/app.js"></script></body>
17 </html>
18
```

O famoso <div> vazio...



O que é
**Server-Side
Rendering?**

HTML completo,
gerado pelo **servidor**
desde a primeira requisição

De comer?!

A força do conceito de SPA!

Erick Petrucelli criou uma enquete.
27 de junho às 14:05

Você tem utilizado SSR em suas aplicações Vue atualmente?

- SSR? É de comer? +42
- Não, fera mesmo é SPA tradicional sem SSR +40
- Sim, através de aplicação universal com Nuxt +34
- Não, prefiro pré-renderizar com prerender-spa-plugin
- Sim, com vue-server-renderer manualmente
- Não, prefiro gerar aplicação estática de outras formas
- Não, prefiro gerar aplicação estática com Nuxt
- Sim, com alguma solução alternativa ao Nuxt (como Ream)

7 21 comentários

Curtir Comentar

Firestore?!

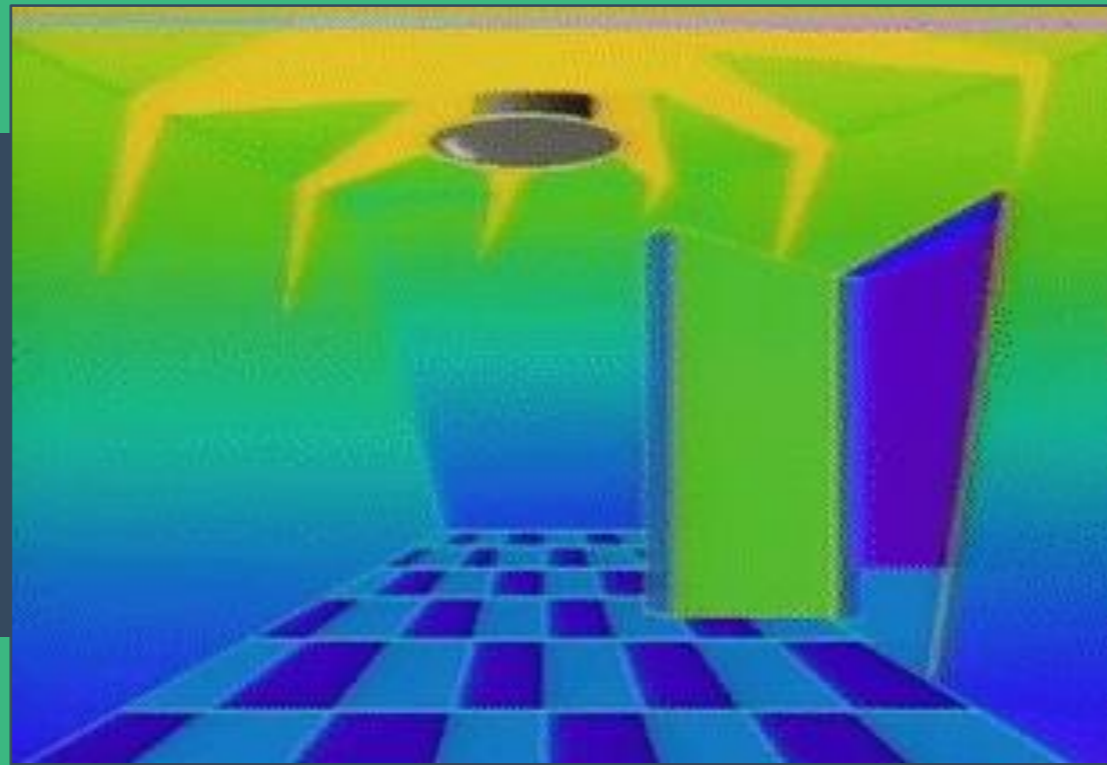
Ufa, vamos em frente...

Renato Santos prefiro usar o firebase 😊
Curtir · Responder · 1 sem

Renato Santos respondeu · 6 respostas

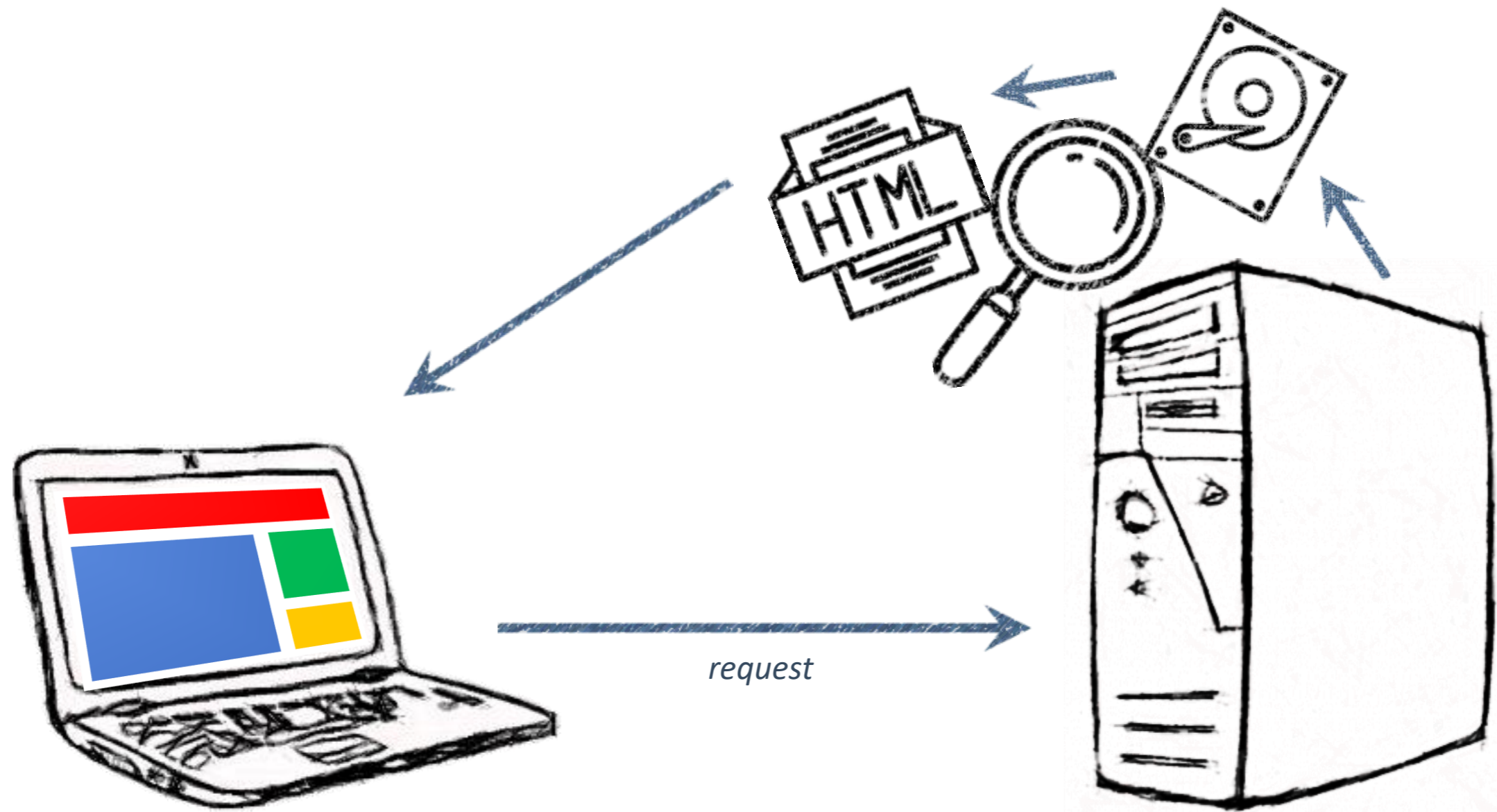
Renato Santos Quero saber mais sobre SSR por enquanto to usando SPA tradicional...
Curtir · Responder · 1 sem

Senta que
lá vem história!



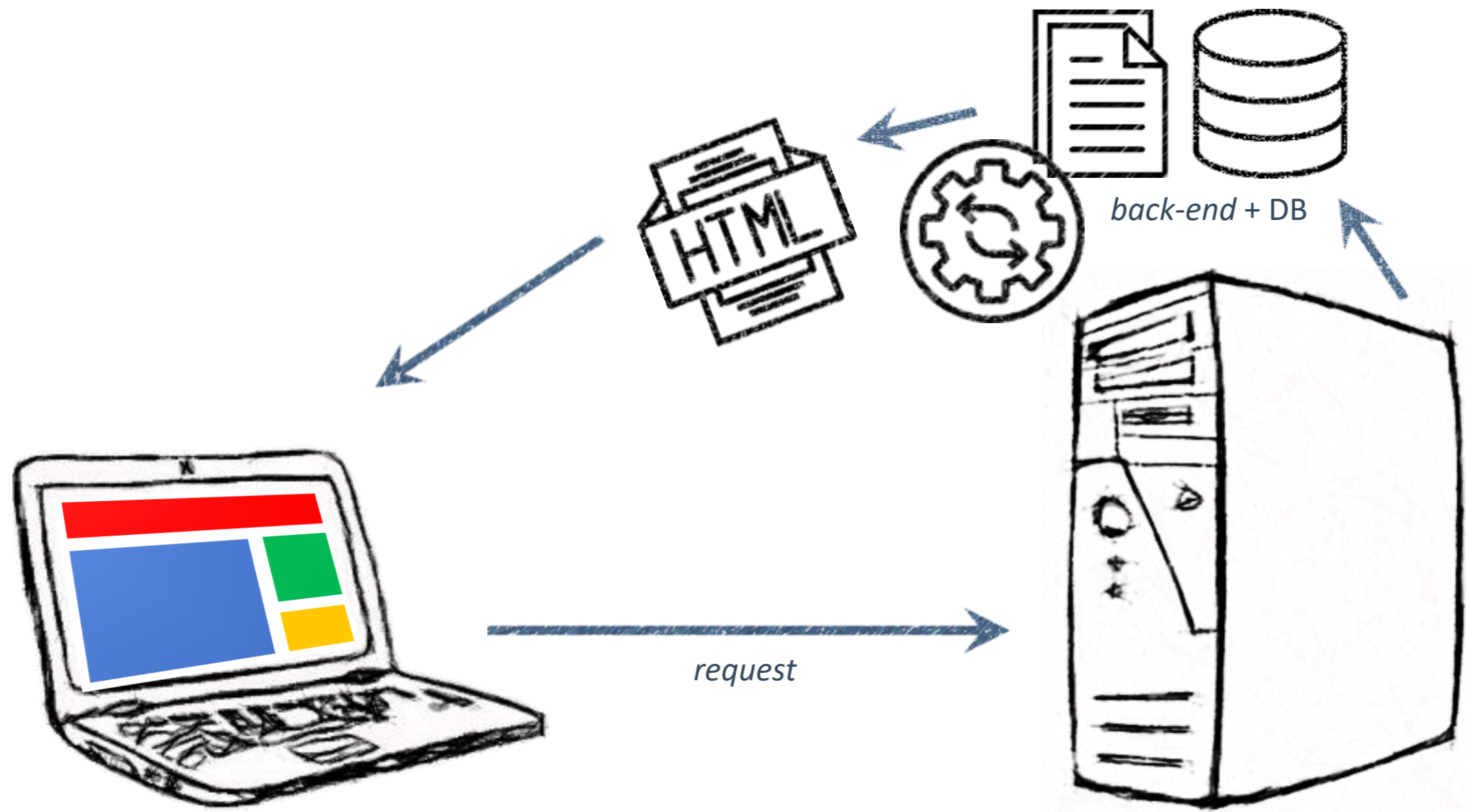
No início da Web

arquivos estáticos com HTML puro



Aí chegou SSR

Common Gateway Interface no servidor





Pois é, não
é novidade!

CGI,
desde 1997!



v2.0.0

156cfb9

v2.0.0 Ghost in the Shell

 yyx990803 released this on 30 Sep 2016 · 1460 commits to dev since this release

Nem no Vue!



The Vue Point

Following



Server-Side Rendering

Vue 2.0 supports server-side rendering (SSR) with streaming and component-level caching, making it possible to achieve blazing fast renders. In addition, *vue-router* and *vuex* 2.0 are designed to support SSR with universal routing and client-side state hydration. See it all working together in the vue-hackernews-2.0 demo app.

1.6K



Abrindo parênteses...

JounQin / react-server-renderer

Used by 7

Watch 2

Star 22

Fork 1

Code

Issues 0

Pull requests 5

Projects 0

Wiki

Security

Insights

Initial commit

master

No React também não!

Browse files

JounQin committed on 29 Dec 2017 Verified

0 parents commit c21f230fe22aec8fec3c38f57f1f50ae0cd50855

Showing 2 changed files with 23 additions and 0 deletions.

Unified

Split

> 21 LICENSE

2 README.md

@@ -0,0 +1,2 @@

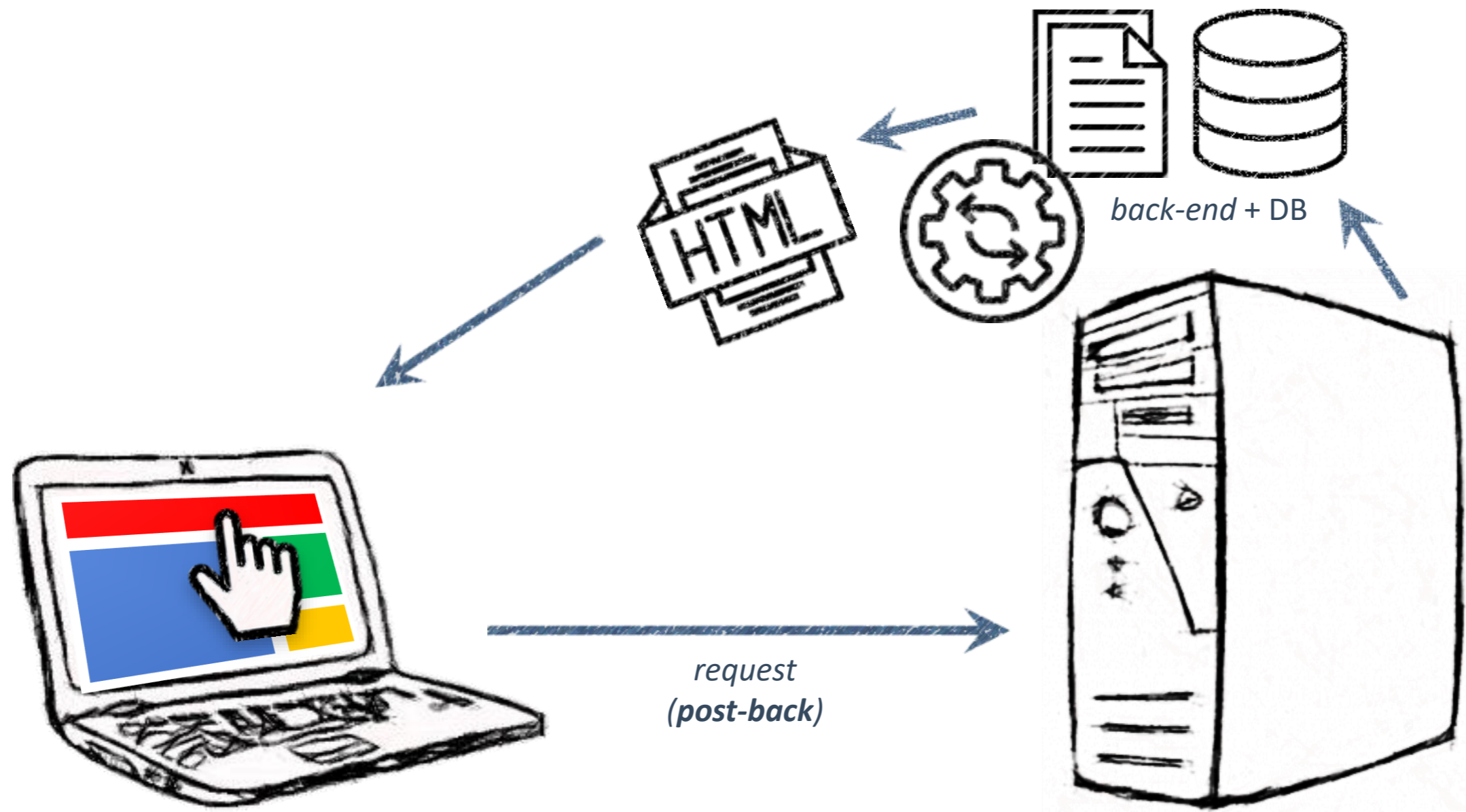
1 + # react-server-render

2 + simple React SSR solution inspired by vue-server-render

...Fechando parênteses.

SSR + Post-Backs

servidor reprocessa tudo, a cada requisição



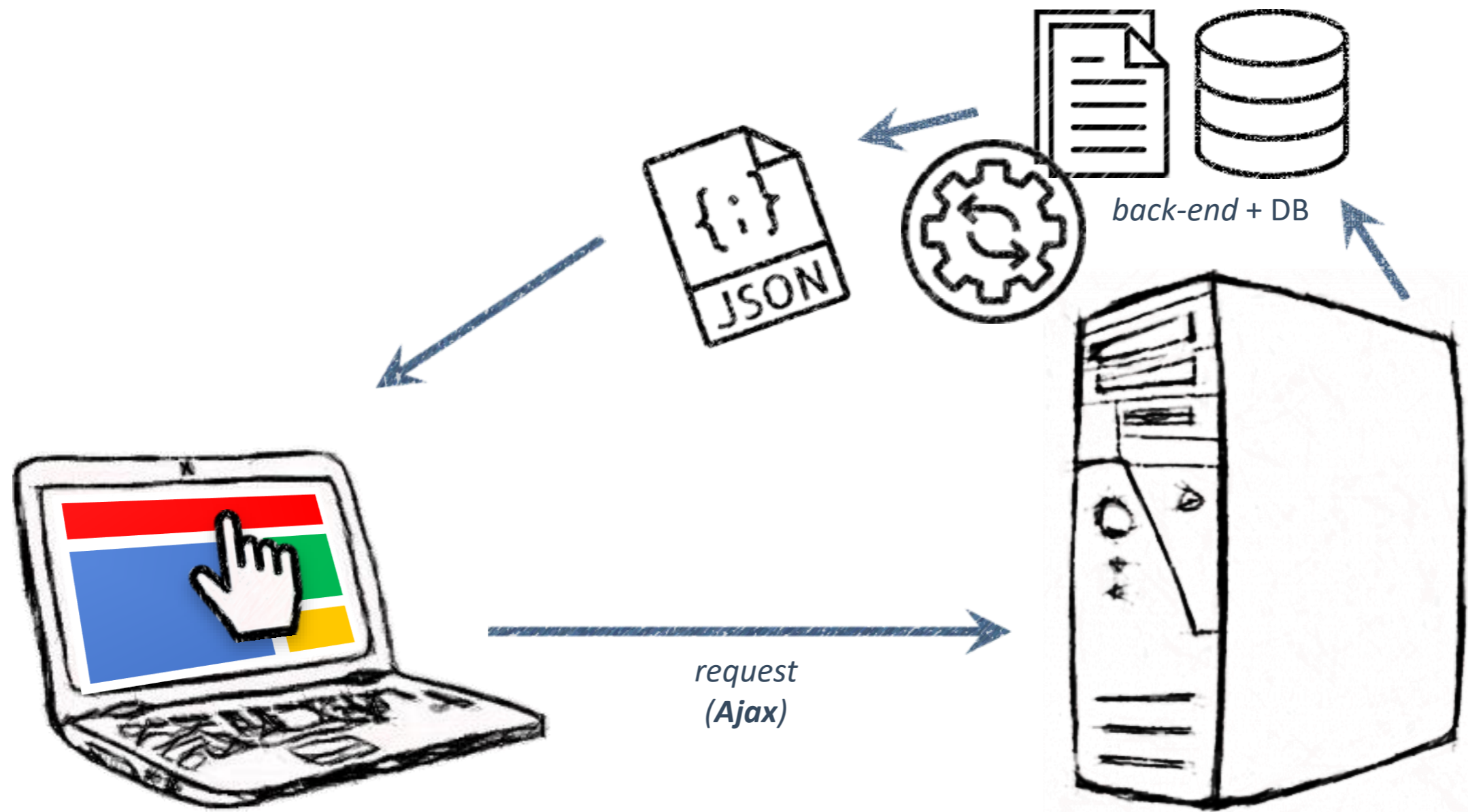
Que
experiência
ruim!

O mundo
precisava de
um herói...



Aí veio o Ajax

empoderando JavaScript para fazer *requests*

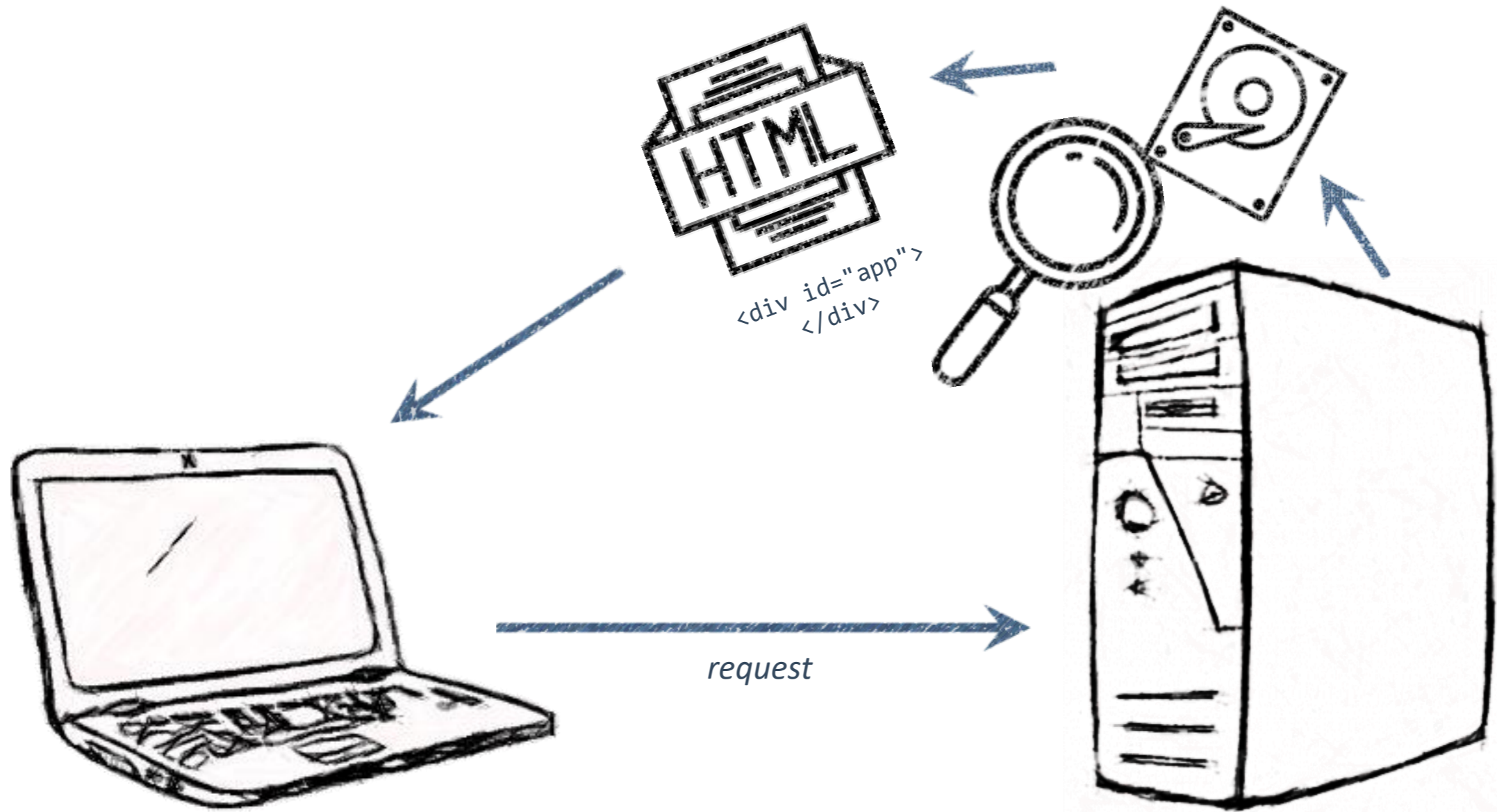




JS é fera,
esquece o
back-end,
vamos fazer
tudo no
front-end!

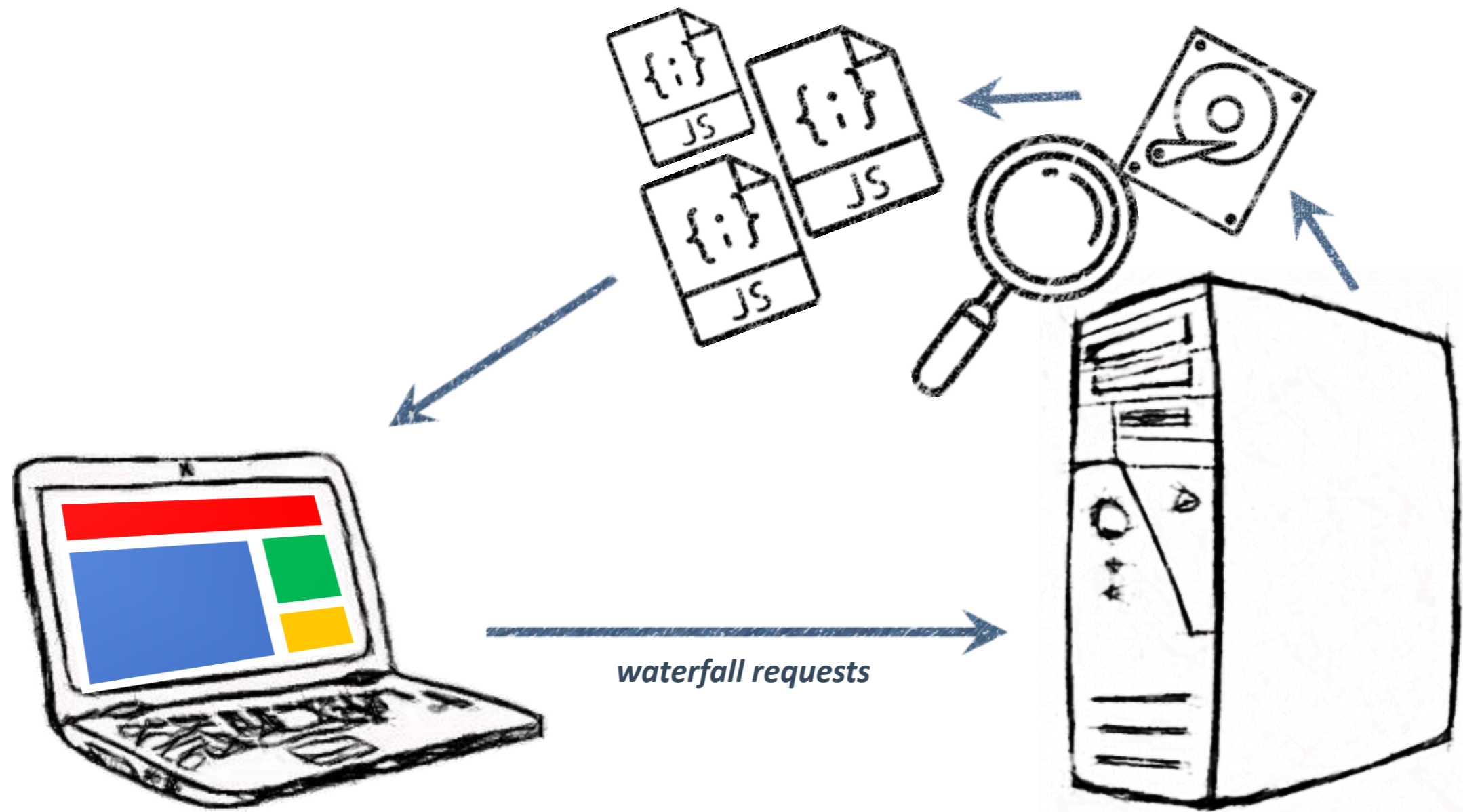
Single-Page Apps

com HTML mínimo, renderizando no cliente



Single-Page Apps

com HTML mínimo, renderizando no cliente



SPA funciona, então...
para que SSR?



SEO e Mídias Sociais

Crawlers poderão ver diretamente a página, completamente renderizada

SPA

SSR

Google

Todas Shopping Imagens Vídeos Notícias Mais Configurações Ferramentas

Sua pesquisa - **site:hn-spa.nuxtjs.org \"VuePress: a fully Vue-powered static site generator\"** - não encontrou nenhum documento correspondente.

Sugestões:

- Certifique-se de que todas as palavras estejam escritas corretamente.
- Tente palavras-chave diferentes.
- Tente palavras-chave mais genéricas.
- Tente usar menos palavras-chave.

Google

Todas Shopping Imagens Vídeos Notícias Mais Configurações Ferramentas

1 resultado (0,24 segundos)

VuePress: a fully Vue-powered static site generator - Nuxt HN

<https://hn.nuxtjs.org/item/16836394> Traduzir esta página

15 de abr de 2018 - First, I'd like to say I'm a big fan of Vue.js. I've used it for a few production apps. > Enjoy the dev experience of Vue + webpack. I just find this ...



Redução de Tráfego

Servidor entrega HTML completo:
potencialmente menos *waterfall requests*



Segurança

Um servidor pode reduzir ataques XSS através de *CSP headers* e *http only cookies*



Acessibilidade

Leitores de tela se comportam melhor
com HTML pré-renderizado



Compatibilidade

Para aqueles clientes que podem não suportar JavaScript



Time-to-Content

Navegadores podem renderizar o HTML
sem ter de esperar todos os *scripts*

Nuxt HN | News SPA

https://hn-spa.nuxtjs.org/news

News Newest Ask Show Jobs Built with Nuxt.js

< prev 1/10 more >

- 239 Shopify and the Power of Platforms (stratechery.com) by jonbaer 3 hours ago | 72 comments
- 118 Malicious apps infect 25M Android devices with 'Agent Smith' malware (phys.org) by lelf 3 hours ago | 94 comments
- 41 Linux Observability with BPF (blog.jessfraz.com) by dankohn1 1 hour ago | 3 comments
- 123 QuickJS JavaScript Engine (bellard.org) by apaprocki 4 hours ago | 18 comments

Elements Console Sources Network Performance Memory Application Security Audits

14:31:40 - hn-spa.nuxtjs.org

Performance: 86

SEO: 92

Score scale: 90-100 (green), 50-89 (orange), 0-49 (red)

Performance Metrics

First Contentful Paint	2.9 s	First Meaningful Paint	3.8 s
Speed Index	2.9 s	First CPU Idle	3.8 s
Time to Interactive	3.8 s	Estimated Input Latency	20 ms

View Trace

Values are estimated and may vary.

Nuxt HN | News SSR

https://hn.nuxtjs.org/news

News Newest Ask Show Jobs Built with Nuxt.js

< prev 1/10 more >

- 239 Shopify and the Power of Platforms (stratechery.com) by jonbaer 3 hours ago | 72 comments
- 118 Malicious apps infect 25M Android devices with 'Agent Smith' malware (phys.org) by lelf 3 hours ago | 94 comments
- 41 Linux Observability with BPF (blog.jessfraz.com) by dankohn1 1 hour ago | 3 comments
- 123 QuickJS JavaScript Engine (bellard.org) by apaprocki 4 hours ago | 18 comments

Elements Console Sources Network Performance Memory Application Security Audits

14:31:21 - hn.nuxtjs.org

Performance: 100

SEO: 100

Score scale: 90-100 (green), 50-89 (orange), 0-49 (red)

Performance Metrics

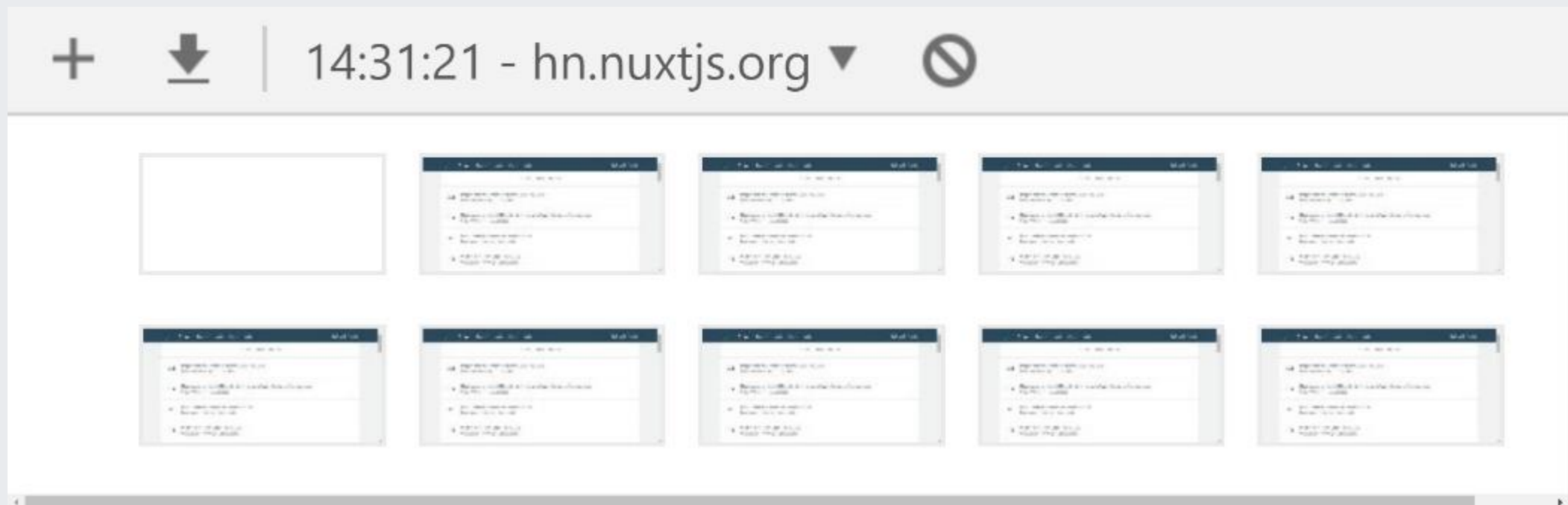
First Contentful Paint	0.8 s	First Meaningful Paint	0.8 s
Speed Index	1.5 s	First CPU Idle	1.4 s
Time to Interactive	1.7 s	Estimated Input Latency	10 ms

View Trace

Values are estimated and may vary.



First Meaningful Paint = 🤪





User Experience

Usuários veem o conteúdo rapidamente,
antes mesmo de pensar em interagir

Nuxt HN | News SPA

https://hn-spa.nuxtjs.org/news

News Newest Ask Show Jobs Built with Nuxt.js

< prev 1/10 more >

Network Performance Memory Application Security

View: Group by frame Preserve log Disable cache Offline Regular 2G

Name	Status	Type	Initiator	Size	Time	Waterfall
icon_64.8mxf1ZMY6of.png	200	png	Other	(Service...	10 ms	
icon_144.8mxf1ZMY6of.png	200	png	Other	(Service...	10 ms	

14 / 16 requests | 1.5 KB / 1.5 KB transferred | 249 KB / 249 KB resources | Finish: 3.53 s | DOMContentLoaded: 3.40 s | Load: 3.51 s

Nuxt HN | News SSR

https://hn.nuxtjs.org/news

News Newest Ask Show Jobs Built with Nuxt.js

< prev 1/10 more >

- 82 Statistics with Julia: Fundamentals for Data Science, ML and AI [pdf] (uq.edu.au) by [aapeli](#) 1 hour ago | [7 comments](#)
- 24 Constructive mathematics and computer programming (1979) [pdf] (cs.cornell.edu) by [mathetic](#) 1 hour ago | [0 comments](#)
- 135 Better Portable Graphics (en.wikipedia.org) by [tosh](#) 5 hours ago | [75 comments](#)
- 9 Older Americans are alone half their waking hours, on average (pewresearch.org) by [wallflower](#) 2 days ago | [2 comments](#)
- 252 My First Fifteen Compilers (blog.sigplan.org) by [azhenley](#) 1 day ago | [42 comments](#)
- 196 Hostyoself: Server in a browser – host from your computer, your phone, etc. (github.com) by [ollerac](#) 9 hours ago | [46 comments](#)
- 73 Playing with a Raspberry Pi 4 64-bit (blog.cloudkernels.net) by [_ananos_](#) 1 day ago | [21 comments](#)

Network Performance Memory Application Security

View: Group by frame Preserve log Disable cache Offline Regular 2G

Name	Status	Type	Initiator	Size	Time	Waterfall
favicon.ico	(pending)		Other	0 B	Pending	
⊙ favicon.ico	(pending)	fetch	workbox-core.p...	0 B	Pending	

12 / 13 requests | 8.5 KB / 8.5 KB transferred | 305 KB / 305 KB resources | Finish: 3.61 s | DOMContentLoaded: 3.55 s | Load: 3.59 s

E quando
não deveríamos
usar SSR?

Intranet

Cenário onde SEO e *waterfall requests* não representam grandes problemas



Desde que as outras vantagens não façam falta!

Serverless

Quando você não quer (ou não pode) pendurar o seu *render* em uma *function*



Mas lembre-se: é possível servir SSR a partir de AWS, Azure, Google Cloud, etc...

Estáticos

Quando não há dados frequentemente mutáveis, tudo pode ser pré-renderizado

```
new PrerenderSPAPlugin({  
  staticDir: '/dist', routes: ['/', '/sobre']  
})
```

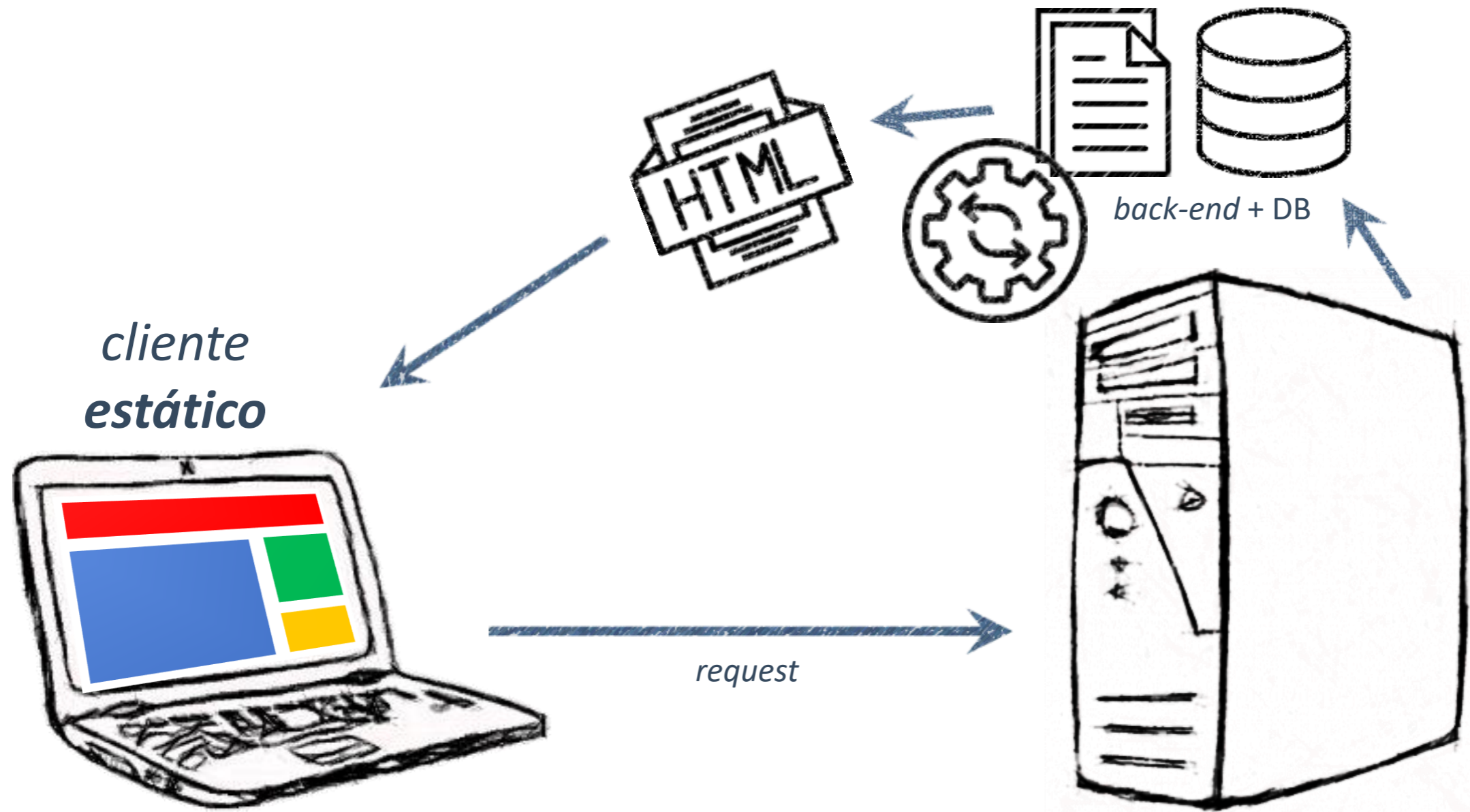
```
> nuxt generate
```

Ok. E se...
Eu quiser
vantagens de
SSR no
conforto do
meu **SPA**?



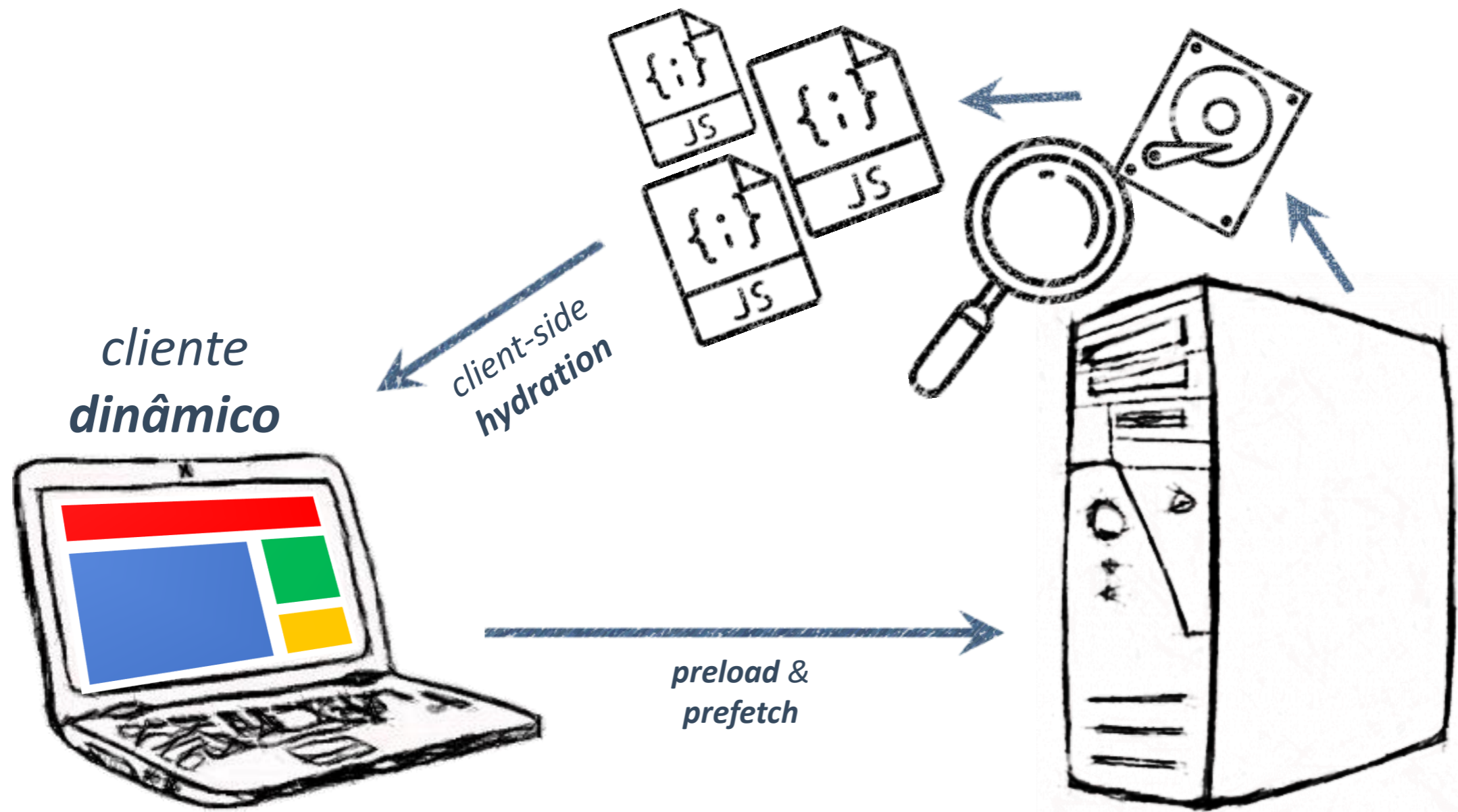
Universal Apps

unificando as abordagens SSR e SPA



Universal Apps

unificando as abordagens SSR e SPA





Que lindo!

E como o **Vue**
pode ajudar
nesta parada?

STACKPATH

Free Trial

StackPath - Build Your Applications and Services at The Edge with a Free Trial.

ads via Carbon

Introduction

What is Server-Side Rendering (SSR)?

Why SSR?

SSR vs Prerendering

About This Guide

Getting Started

Writing Universal Code

Source Code Structure

Routing and Code-Splitting

Data Pre-Fetching and State

Client Side Hydration

Introducing Bundle Renderer

Build Configuration

CSS Management

Head Management

Caching

Streaming

Usage in non-Node.js Environments

Vue.js Server-Side Rendering Guide

NOTE

This guide requires the following minimum versions of Vue and supporting libraries:

- vue & vue-server-renderer 2.3.0+
- vue-router 2.5.0+
- vue-loader 12.0.0+ & vue-style-loader 3.0.0+

If you have previously used Vue 2.2 with SSR, you will notice that the recommended code structure is now **a bit different** (with the new `runInNewContext` option set to `false`). Your existing app should continue to work, but it's recommended to migrate to the new recommendations.

What is Server-Side Rendering (SSR)?

Vue.js is a framework for building client-side applications. By default, Vue components produce and manipulate DOM in the browser as output. However, it is also possible to render the same components into HTML strings on the server, send them directly to the browser, and finally "hydrate" the static markup into a fully interactive app on the client.

A server-rendered Vue.js app can also be considered "isomorphic" or "universal", in the sense that the majority of your app's code runs on both the server **and** the client.

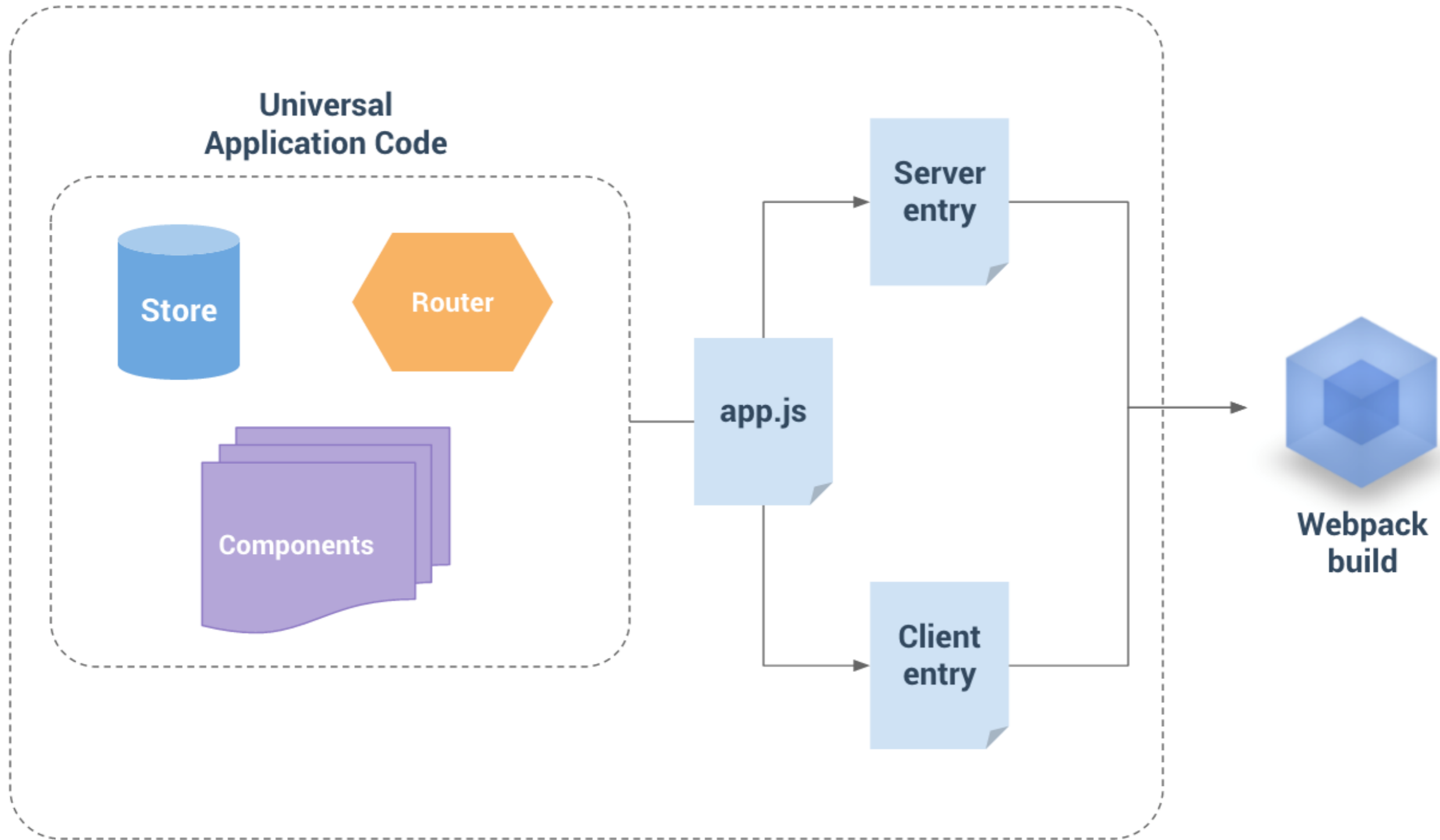
Why SSR?

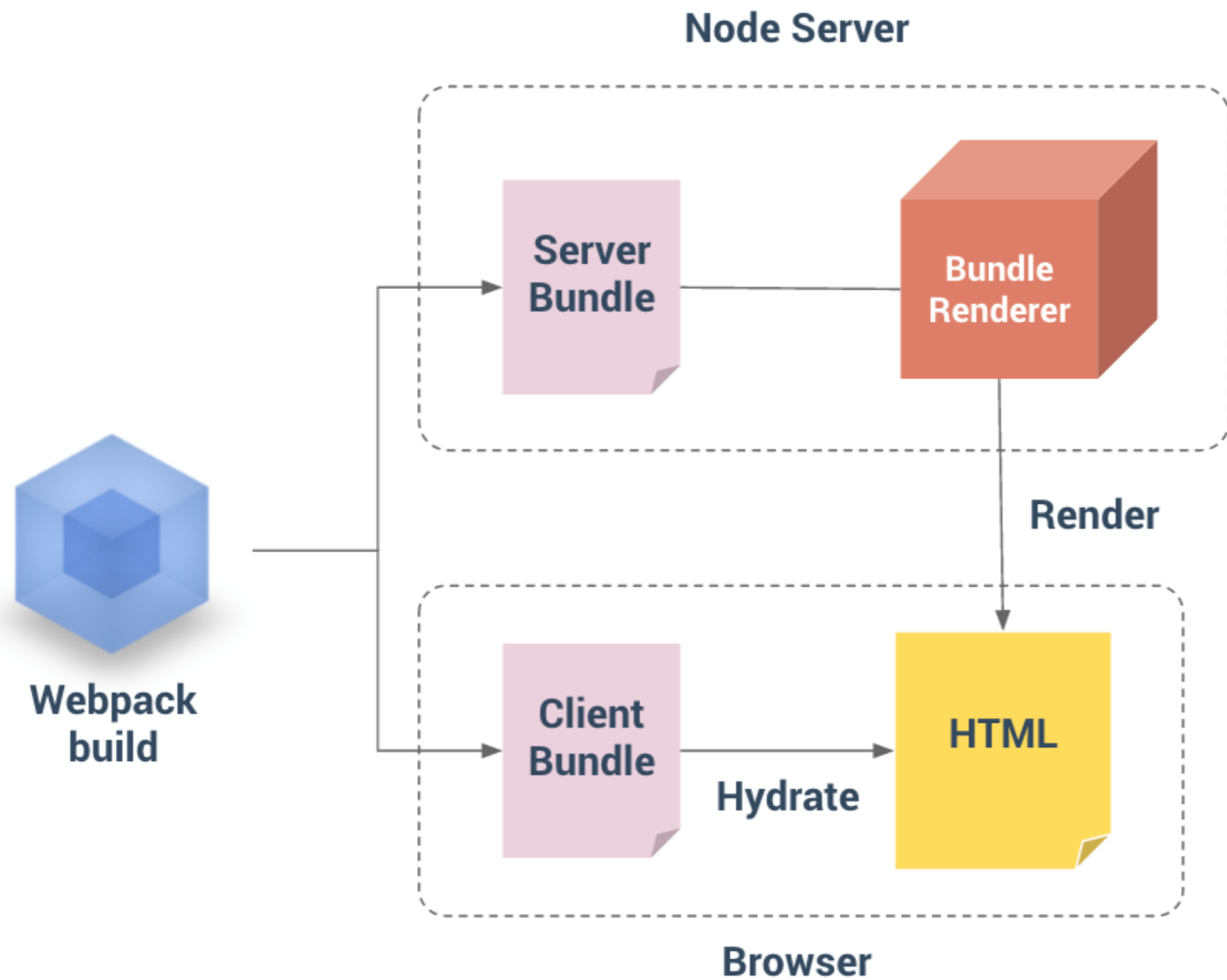
Compared to a traditional SPA (Single-Page Application), the advantage of SSR primarily lies in:

- Better SEO, as the search engine crawlers will directly see the fully rendered page.

Note that as of now, Google and Bing can index synchronous JavaScript applications just fine.

Source





Para se aprofundar:

github.com/vuejs/vue-hackernews-2.0



E esse tal
de **Nuxt?**



The Vue.js Framework

For **Universal Applications**.

Nuxt.js presets all the configuration needed to make your development of a Vue.js application enjoyable.

[GET STARTED](#)
[GITHUB V2.8.1](#)

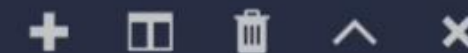

Video produced by [Vue Mastery](#), download their free [Nuxt Cheat Sheet](#).

Why Nuxt?



PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

1: powershell



Windows PowerShell

Copyright (C) Microsoft Corporation. Todos os direitos reservados.

PS D:\Projetos\tdc2019\universal> npm init nuxt-app .



Exemplo prático:

github.com/ErickPetru/tdcsp2019-ssr-universal-nuxt



A pergunta final: **Dúvidas?**





Erick Petrucelli

 [@erickpetru](https://twitter.com/@erickpetru)

 [erick-petrucelli](https://www.linkedin.com/in/erick-petrucelli)

 [ErickPetru](https://github.com/ErickPetru)