

Making Magento Feel Instant

Building Smooth Storefront Journeys

cream

Making Magento Feel Instant

For years, Single Page Apps were the way to make a site feel fast while delivering a rich experience.

From now on, the next page is **already loaded before you've even clicked**. Natively, in the browser.



Edwin Bos

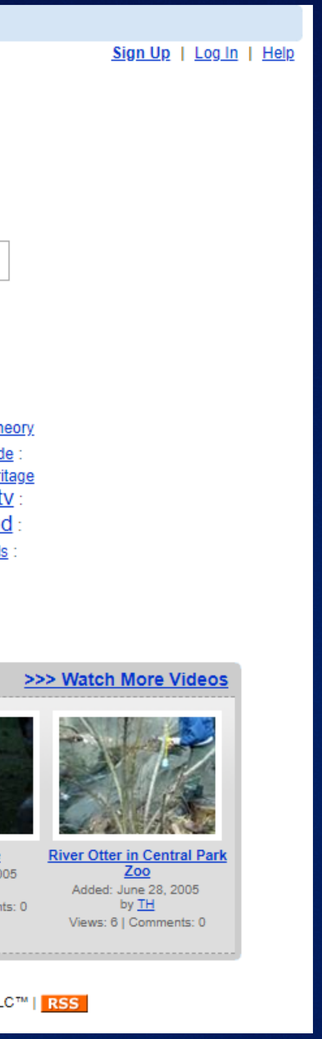
Lead Frontend Developer at Cream

https://www.linkedin.com/in/ebos/

A little bit of history

LANL 15736

1991 - 2006


Sign Up | Log In | Help
>>> Watch More Videos
River Otter in Central Park Zoo
Added: June 28, 2005
by TH
Views: 6 | Comments: 0
RSS


JULY 14
Welcome to Apple 1997
Find It
Product Information
Customer Support
Technology & Research
Developer World
Groups & Interests
Resources Online
About Apple
Apple Sites Worldwide
Switzerland
Taiwan
Turkey
UK & Ireland
United States
Go
Where to Buy
Register to Win
Software Updates
Home Page Archives
Introducing CyberDrive
Register today for a free CD-ROM.
EMATE 300
Mobile, Affordable, & Smart
MOVIES FROM MARS
QuickTime VR Takes You Out of this World
What's Hot
Preorder Mac OS 8
Now you can preorder Mac OS 8, described by Macworld as "the most comprehensive update to the Mac OS in years, sporting a bold new look, a speedier Finder, more shortcuts and integrated Internet functions."
Want a PowerBook?
Qualify to win a PowerBook 3400/200 by entering this month's Apple Registration Sweepstakes.
Big Help for Small Biz Find out what you need to make your small business a success. Apple Small Business has information about everything from great deals on leasing to dealing with the SBA.
Be the First to Know
Learn about new Macintosh software releases the moment they become available. Check Hot Mac Products to hear about programs like Speed Demon, ReBirth RB-338 and QuickCRC.
Newton Connects
Newton, Inc., will enhance network connectivity for Newton-based devices this fall via Newton Internet Enabler 2.0. Ethernet capability can connect devices to Local Area Networks.
Welcome to Mars
See alien terrain in QuickTime VR movies from Sojourner, the brave six-

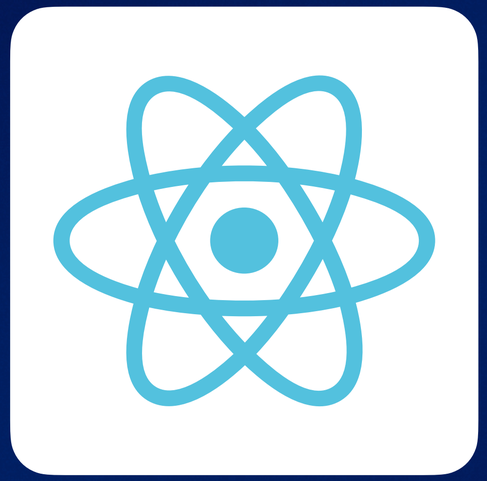

Welcome to Microsoft's World Wide Web Server!
Where do you want to go today?
If your browser doesn't support images, we have a text menu as well
Microsoft
Knowledge Base
Send us your feedback
Windows News
Back Office & Windows NT Workstation
What's New
gopher.microsoft.com
Developer Network OnRamp
ftp.microsoft.com
Microsoft TechNet
Microsoft TV
Microsoft Sales Information
Windows Sockets
Employment Opportunities
Facts about this server
The Microsoft Network
WWW.MICROSOFT.COM is running Microsoft's Windows NT Server 3.5 and EMWAC's HTTPS


home
Textversion
Schnellsuche
Los!
Wegweiser
Belletristik
Amazon.de und Telebuch.de
Mehr Bücher für Deutschland
Bücher machen Freu(n)de
Geschenkgutscheine von Amazon.de
Amazon.de bringt's
Buchempfehlungen und Neuigkeiten rund ums Buch per E-Mail
Sie brauchen Hilfe?
Schicken Sie uns eine Mail!

August 26, 2006



2010 - 2014


Frameworks for Single Page Apps (SPA)

Single Page Apps

- Instant navigation
- Transitions between pages
- JS-state between views
- Feels like a native app

- Heavy initial load
- SEO is lot of extra work
- Router and state management all have to be built by hand
- Hydration mismatches, memory leaks, stale state



June 2015



Last 10 years

- Dialog & Popover
- bfcache
- Scroll Driven Animations
- Native CSS Nesting
- Container Queries
- Speculation Rules
- loading=“lazy"
- Web Components
- :has()
- CSS Anchor Positioning
- View Transitions
- Color Functions



bfcache



"**Bfcache** freezes an entire page in memory when you navigate away from it, so the browser can restore it **instantly** on back/forward navigation without new requests or a full reload"



Without bfcache

Ethiopia — Native

native.dev.cream.nl/coffee-beans/ethiopia-500-gram/

✓ Free delivery from 50 euro ✓ Ordered before 23:00, delivered tomorrow ✓ 25 years of experience

Native

Coffee beans | Espresso | Caffeine free | Trial packs | Specials | Subscriptions

Home → Koffiebonen → **Ethiopia**



Ethiopia

JASMINE · BERGAMOT · RED BERRIES

ROAST LEVEL ●●●●○

WEIGHT

250 G | **500 G** | 1 KG

18,99

Add to cart

ALTITUDE | VERIETAL | PROCESS

Ethiopia — Native

native.dev.cream.nl/coffee-beans/ethiopia-500-gram/

With bfcache

✓ Free delivery from 50 euro ✓ Ordered before 23:00, delivered tomorrow ✓ 25 years of experience

Native

Coffee beans | Espresso | Caffeine free | Trial packs | Specials | Subscriptions

Home → Koffiebonen → **Ethiopia**



Ethiopia

JASMINE · BERGAMOT · RED BERRIES

ROAST LEVEL ●●●●○

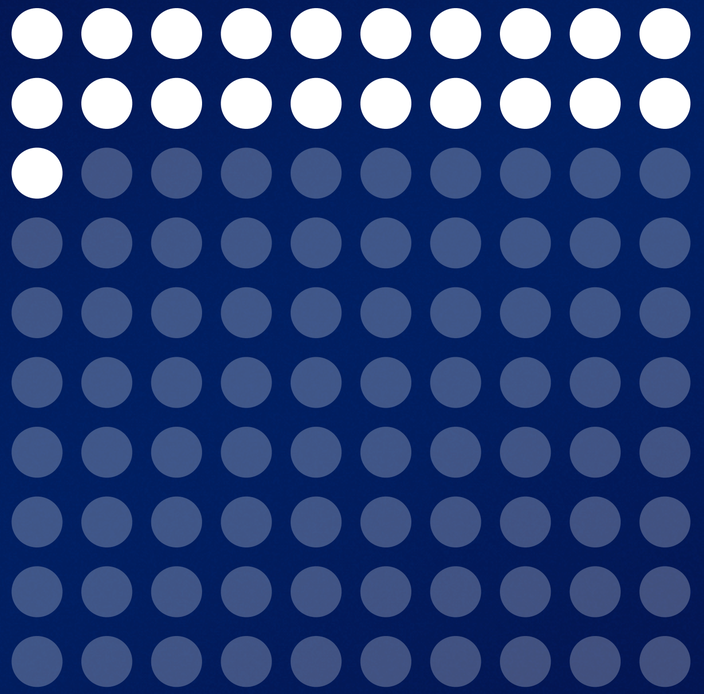
WEIGHT

250 G | **500 G** | 1 KG

18,99

Add to cart

ALTITUDE | VERIETAL | PROCESS

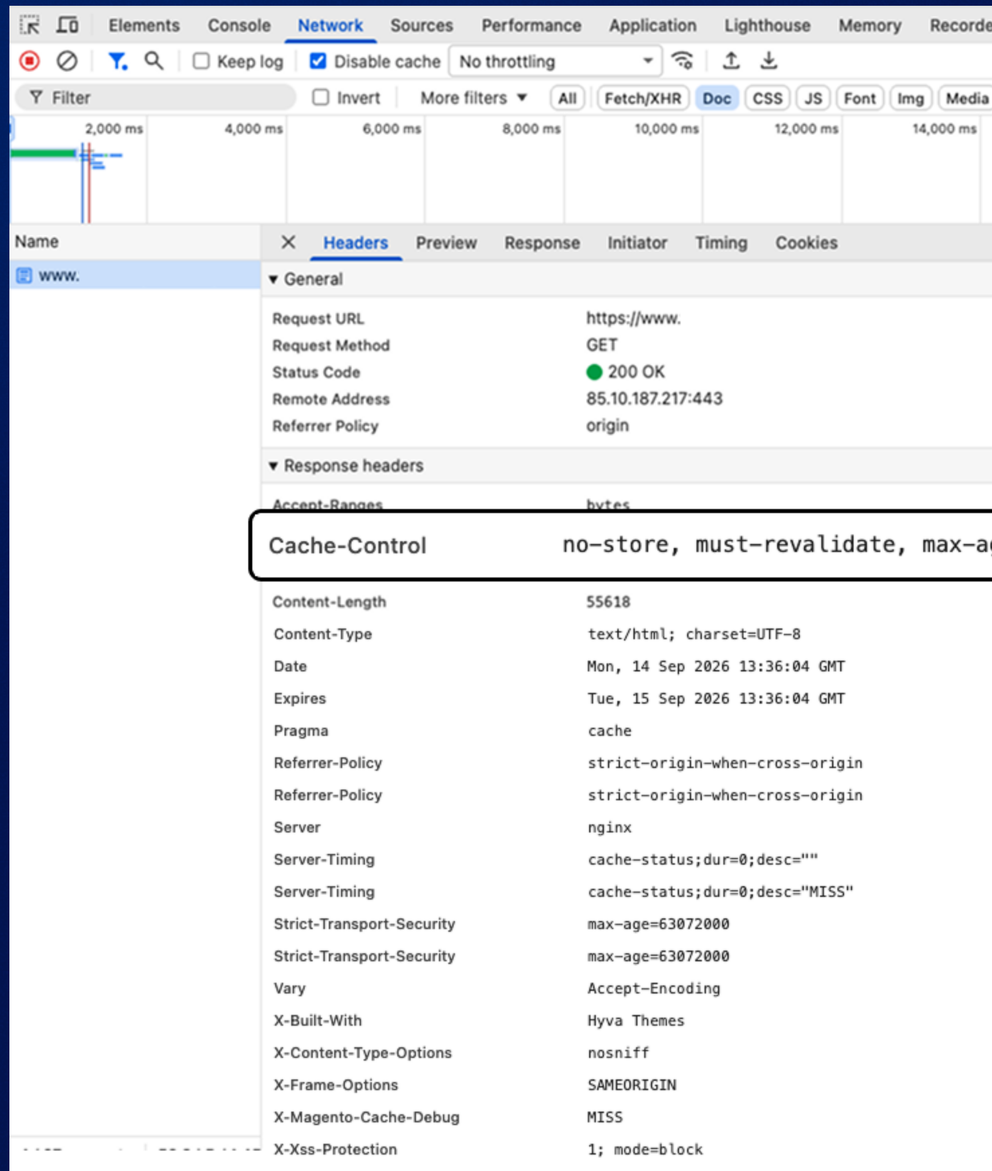


More than 1 in 5 navigations on mobile are either back or forward.

Source: https://web.dev/articles/bfcache & CrUX BigQuery data

Cache Control

Remove "*Cache-control: no-store*" header



Resource: https://docs.hyva.io/hyva-themes/performance/bfcache.html

What could possibly go wrong?



Ethiopia — Native

native.dev.cream.nl/coffee-beans/ethiopia-500-gram/

✓ Free delivery from 50 euro ✓ Ordered before 23:00, delivered tomorrow ✓ 25 years of experience

Native

Find your coffee

Coffee beans | Espresso | Caffeine free | Trial packs | Specials | Subscriptions

Home → Coffee Beans → **Ethiopia**



Ethiopia

JASMINE · BERGAMOT · RED BERRIES

ROAST LEVEL ●●●●○

WEIGHT

250 G | **500 G** | 1 KG

18,99

Add to cart

ALTITUDE | VERIETAL | PROCESS

Close the dialog

Javascript

```
window.addEventListener('pageshow', event => {
  if (event.persisted) {

    // Close the dialog

  }
})
```



Ethiopia — Native

native.dev.cream.nl/coffee-beans/ethiopia-500-gram/

✓ Free delivery from 50 euro ✓ Ordered before 23:00, delivered tomorrow ✓ 25 years of experience

Native

Find your coffee

Coffee beans | Espresso | Caffeine free | Trial packs | Specials | Subscriptions

Home → Coffee Beans → **Ethiopia**



Ethiopia

JASMINE · BERGAMOT · RED BERRIES

ROAST LEVEL ●●●●○

WEIGHT

250 G | **500 G** | 1 KG

18,99

Add to cart

ALTITUDE | VERIETAL | PROCESS

Shopping cart — Native

native.dev.cream.nl/cart

✓ Free delivery from 50 euro ✓ Ordered before 23:00, delivered tomorrow ✓ 25 years of experience

Native

Find your coffee

1

Coffee beans | Espresso | Caffeine free | Trial packs | Specials | Subscriptions

Home → **Cart**

Shopping cart



Ethiopia
500 G
18,99

1

18,99

Order summary

Subtotal	18,99
Shipping	4,95
Total	**23,94**

Proceed to checkout

Native

Update cart items amount

Javascript

```
window.addEventListener('pageshow', event => {
  if (event.persisted) {

    // Close the dialog
    // Update cart items amount

  }
})
```



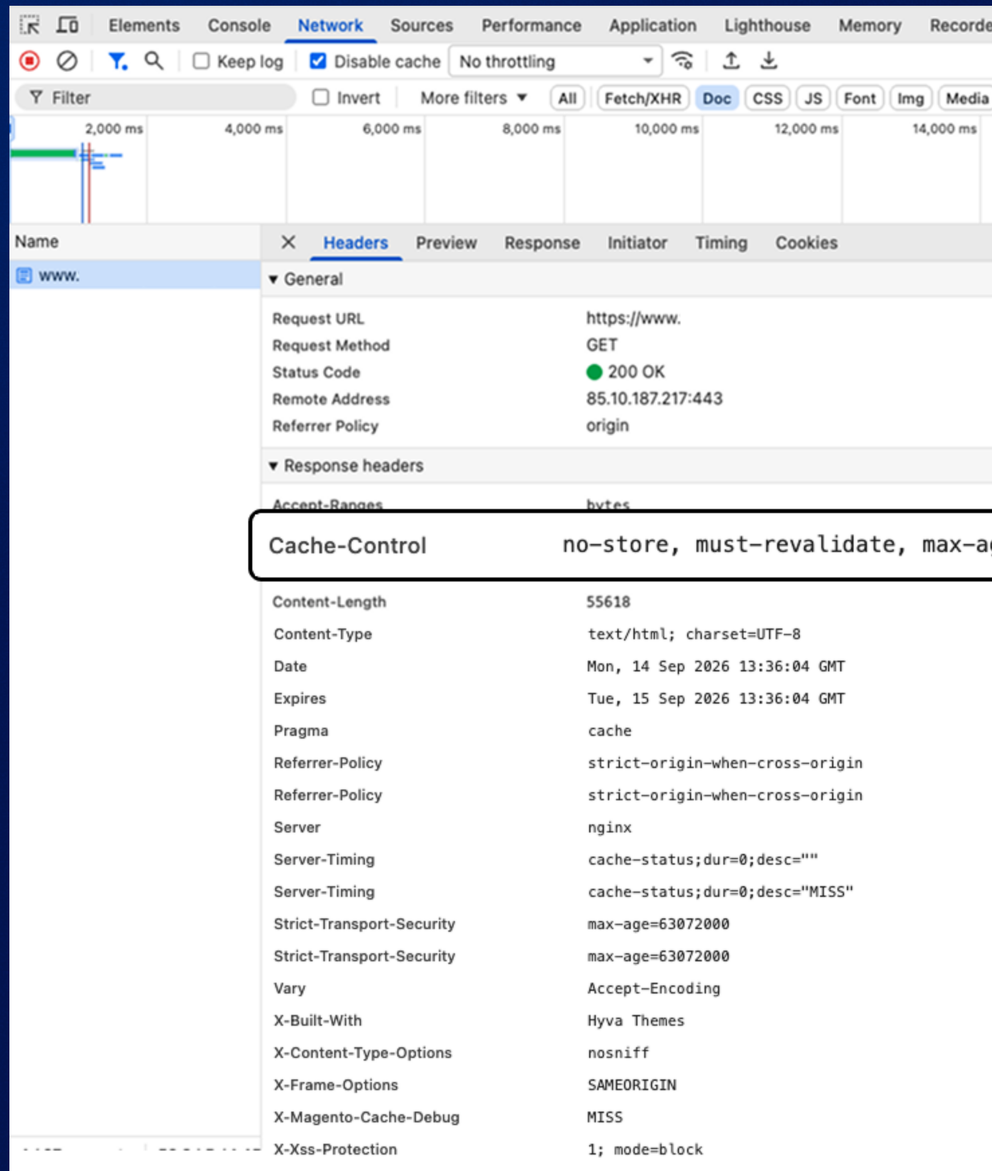
Cache Control

Since 2025 also with *"no-store"* bfcache

Don't rely on Chrome that is ignoring *"Cache-control: no-store"*

> A page is not coming from the bfcache when a cookie is changed
>
> bfcache is not working in every browsers

Resource: https://docs.hyva.io/hyva-themes/performance/bfcache.html



Fast back and forward navigation

But what if the user did not yet visited the page?

Speculation Rules



> **Speculation Rules** lets you tell the browser which links to prefetch or prerender in advance, based on rules you define, so the next page is already loaded by the time the user clicks.



Without speculation rules

Coffee Beans — Native

native.dev.cream.nl/coffee-beans/

✓ Free delivery from 50 euro ✓ Ordered before 23:00, delivered tomorrow ✓ 25 years of experience

Native

Find your coffee

6

Coffee beans | Espresso | Caffeine free | Trial packs | Specials | Subscriptions

Home → **Coffee Beans**

Coffee Beans







Speculation Rules

The default



```
<script type="speculationrules">
{
  "prefetch": [{
    "where": {
      "and": [
        {
          "href_matches": "/*"
        },
        {
          "not": {
            "href_matches": [
              "/customer/*",
              "/checkout/*"
            ]
          }
        },
        {
          "not": {
            "selector_matches": [
              ".no-preload",
              ".do-not-prerender"
            ]
          }
        }
      ]
    },
    "eagerness": "moderate"
  }]
}
</script>
```

With speculation rules

Coffee Beans — Native

native.dev.cream.nl/coffee-beans

✓ Free delivery from 50 euro ✓ Ordered before 23:00, delivered tomorrow ✓ 25 years of experience

Native

Find your coffee

6

Coffee beans | Espresso | Caffeine free | Trial packs | Specials | Subscriptions

Home → **Coffee Beans**

Coffee Beans







https://native.dev.cream.nl/coffee-beans/ethiopia-500-gram/

Beyond the default

Multiple eagerness

You can add multiple eagerness types in a speculation ruleset

- Conservative
- Moderate
- Eager
- Immediate

```
<script type="speculationrules">
{
  "prefetch": [
    {
      "where": {
        "and": [
          {
            "href_matches": "/*"
          },
          {
            "not": {
              "selector_matches": ".speculate-immediate"
            }
          },
        ]
      },
      "eagerness": "moderate"
    }
    {
      "where": {
        "selector_matches": ".speculate-immediate"
      },
      "eagerness": "immediate"
    }
  ]
}
</script>
```



Multiple actions

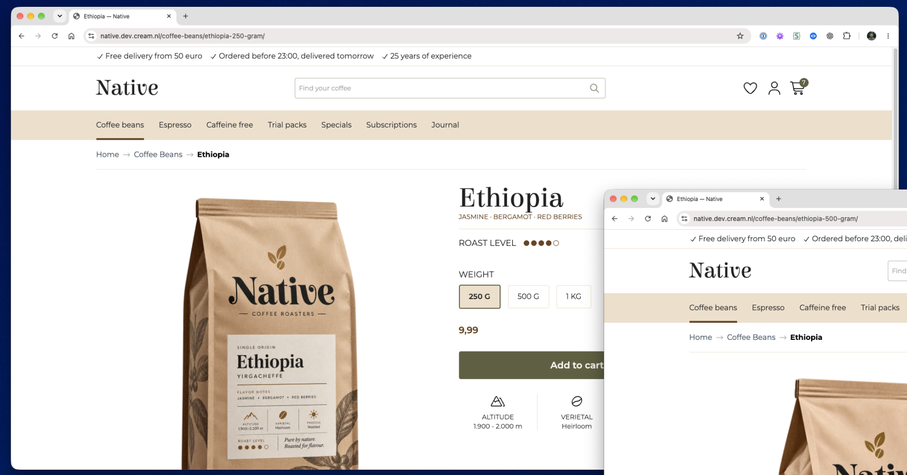
You can add multiple actions in a speculation ruleset

- Prefetch
- Prerender
- prerender_until_script

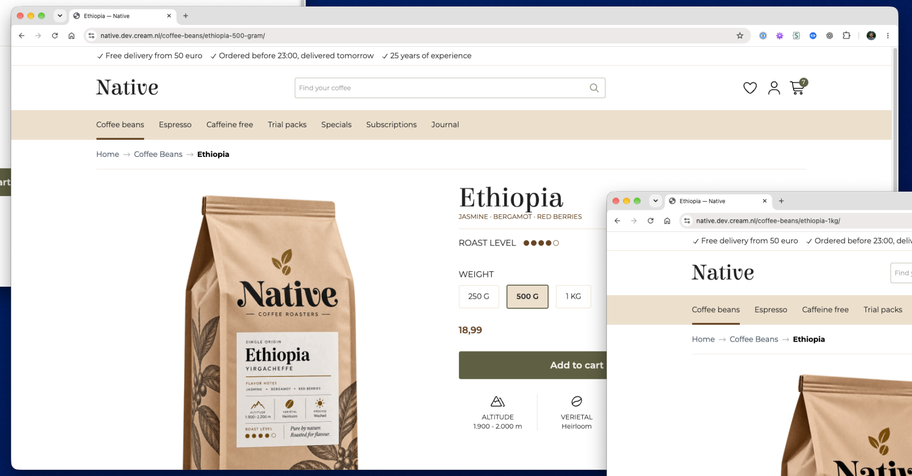
```
<script type="speculationrules">
{
  "prefetch": [
    {
      "where": {
        "and": [
          {
            "href_matches": "/*"
          },
          {
            "not": {
              "selector_matches": ".speculate-immediate"
            }
          },
        ]
      },
      "eagerness": "moderate"
    }
  ],
  "prerender": [
    {
      "where": {
        "selector_matches": ".speculate-immediate"
      },
      "eagerness": "immediate"
    }
  ]
}
</script>
```



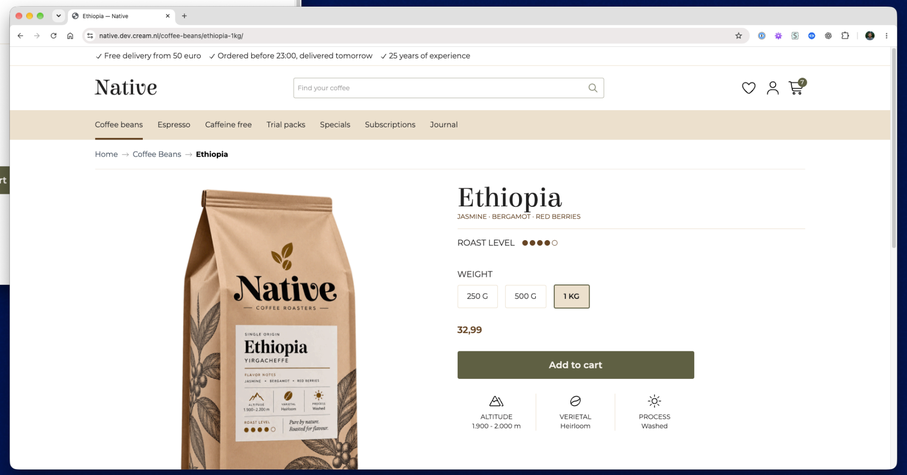
Linked products



/ethiopia-250-gram



/ethiopia-500-gram



/ethiopia-1kg

Without speculation rules

Ethiopia — Native

native.dev.cream.nl/coffee-beans/ethiopia-500-gram/

✓ Free delivery from 50 euro ✓ Ordered before 23:00, delivered tomorrow ✓ 25 years of experience

Native

Find your coffee

6

Coffee beans | Espresso | Caffeine free | Trial packs | Specials | Subscriptions

Home → Coffee Beans → **Ethiopia**



Ethiopia

JASMINE · BERGAMOT · RED BERRIES

ROAST LEVEL ●●●●○

WEIGHT

250 G | **500 G** | 1 KG

18,99

Add to cart

ALTITUDE | VERIETAL | PROCESS

With speculation rules

Ethiopia — Native

native.dev.cream.nl/coffee-beans/ethiopia-500-gram/

✓ Free delivery from 50 euro ✓ Ordered before 23:00, delivered tomorrow ✓ 25 years of experience

Native

Find your coffee

6

Coffee beans | Espresso | Caffeine free | Trial packs | Specials | Subscriptions

Home → Coffee Beans → **Ethiopia**



Ethiopia

JASMINE · BERGAMOT · RED BERRIES

ROAST LEVEL ●●●●○

WEIGHT

250 G | **500 G** | 1 KG

18,99

Add to cart

ALTITUDE | VERIETAL | PROCESS

Scroll to the same position

Javascript

```
window.addEventListener('scroll', event => {

  // Save the scroll position in e.g. localStorage

})


window.addEventListener('pageshow', event => {
  if (event.persisted) {

    // Get the last scroll position and scroll to this place

  }
})
```



With SP + scroll position

Ethiopia — Native

native.dev.cream.nl/coffee-beans/ethiopia-500-gram/

✓ Free delivery from 50 euro ✓ Ordered before 23:00, delivered tomorrow ✓ 25 years of experience

Native

Find your coffee

6

Coffee beans | Espresso | Caffeine free | Trial packs | Specials | Subscriptions

Home → Coffee Beans → **Ethiopia**



Ethiopia

JASMINE · BERGAMOT · RED BERRIES

ROAST LEVEL ●●●●○

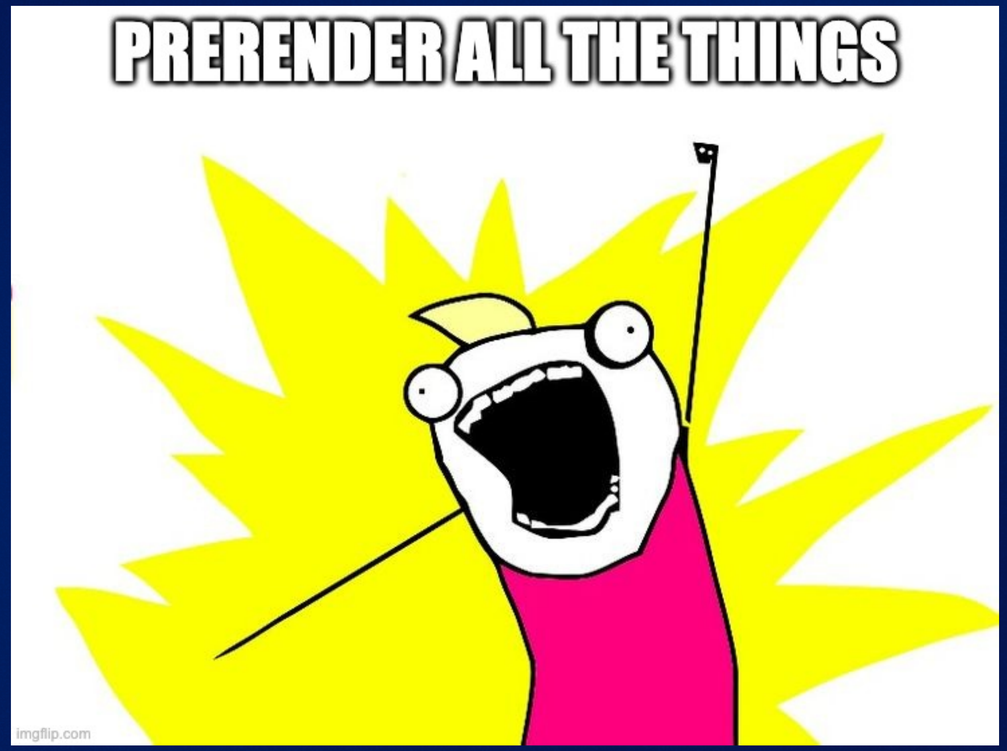
WEIGHT

250 G | **500 G** | 1 KG

18,99

Add to cart

ALTITUDE | VERIETAL | PROCESS



Please don’t

Now it is fast

But does it have animations?



View Transitions



"**View Transitions** let the browser **automatically** generate an animated transition between two DOM states by capturing **before** and **after** snapshots and animating them via CSS"



Ethiopia — Native

native.dev.cream.nl/coffee-beans/ethiopia-500-gram/

Coffee beans Espresso Caffeine free Trial packs Specials Subscriptions

Home → Coffee Beans → **Ethiopia**



Ethiopia

JASMINE · BERGAMOT · RED BERRIES

ROAST LEVEL ●●●●○

WEIGHT

250 G | **500 G** | 1 KG

18,99

Add to cart

ALTITUDE	VERIETAL	PROCESS
1.900 - 2.000 m	Heirloom	Washed

@view-transition

```css
@view-transition {
    navigation: auto;
}
```



Ethiopia — Native

native.dev.cream.nl/coffee-beans/ethiopia-500-gram/

Coffee beans Espresso Caffeine free Trial packs Specials Subscriptions

Home → Coffee Beans → **Ethiopia**



Ethiopia

JASMINE · BERGAMOT · RED BERRIES

ROAST LEVEL ●●●●○

WEIGHT

250 G | **500 G** | 1 KG

18,99

Add to cart

ALTITUDE	VERIETAL	PROCESS
1.900 - 2.000 m	Heirloom	Washed

https://native.dev.cream.nl/coffee-beans/ethiopia-500-gram/

Slide animation

CSS

```css
::view-transition-group(product-image),
::view-transition-old(product-image),
::view-transition-new(product-image) {
    animation-duration: 0.5s;
    animation-timing-function: ease-in-out;
}

:root:active-view-transition-type(slide-left) {
    &::view-transition-old(product-image) {
        animation-name: slide-out-left;
    }

    &::view-transition-new(product-image) {
        animation-name: slide-in-right;
    }
}
```



Journal — Native

native.dev.cream.nl/blog/

✓ Free delivery from 50 euro ✓ Ordered before 23:00, delivered tomorrow ✓ 25 years of experience

Native

Find your coffee

7

Coffee beans | Espresso | Caffeine free | Trial packs | Specials | Subscriptions | Journal

Home → **Journal**

Journal



The Art of Slow Roasting

Why we roast in small batches, and how patience shapes the flavour in every cup.



A Guide to Brewing Methods

From pour-over to French press: how to pick the right method for your beans.

Now it's blazing fast with an engaging experience

- Instant navigation
- Transitions between pages
- JS-state between views
- Feels like a native app

All **native** in the browser





Thank you

Get the slides

cream