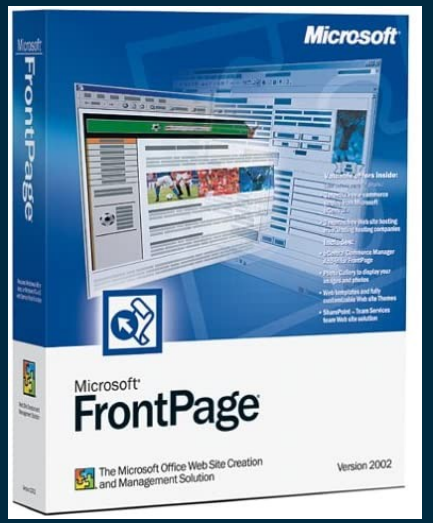
green
open source
hosting

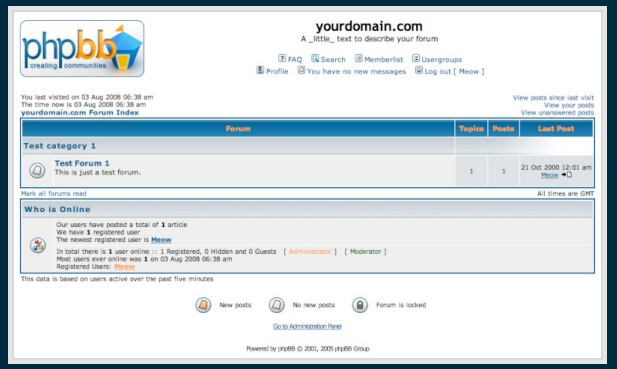
Duurzame websites & Duurzame bedrijfsvoering

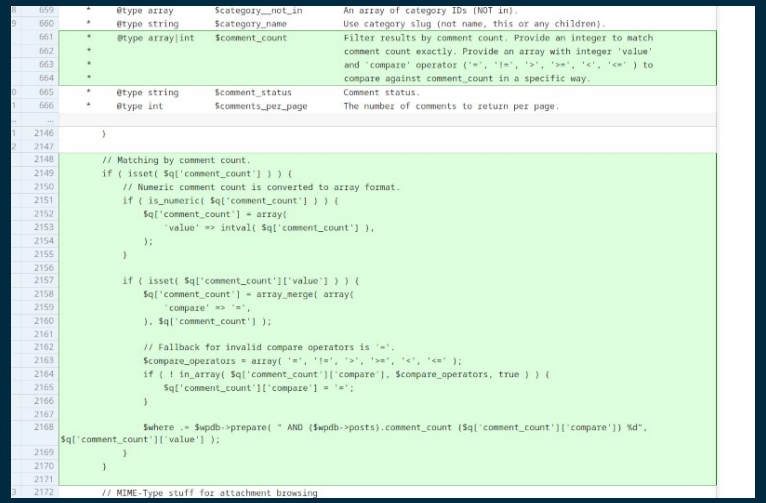
Ramon Fincken – CEO Halvar.io

halvar

About me





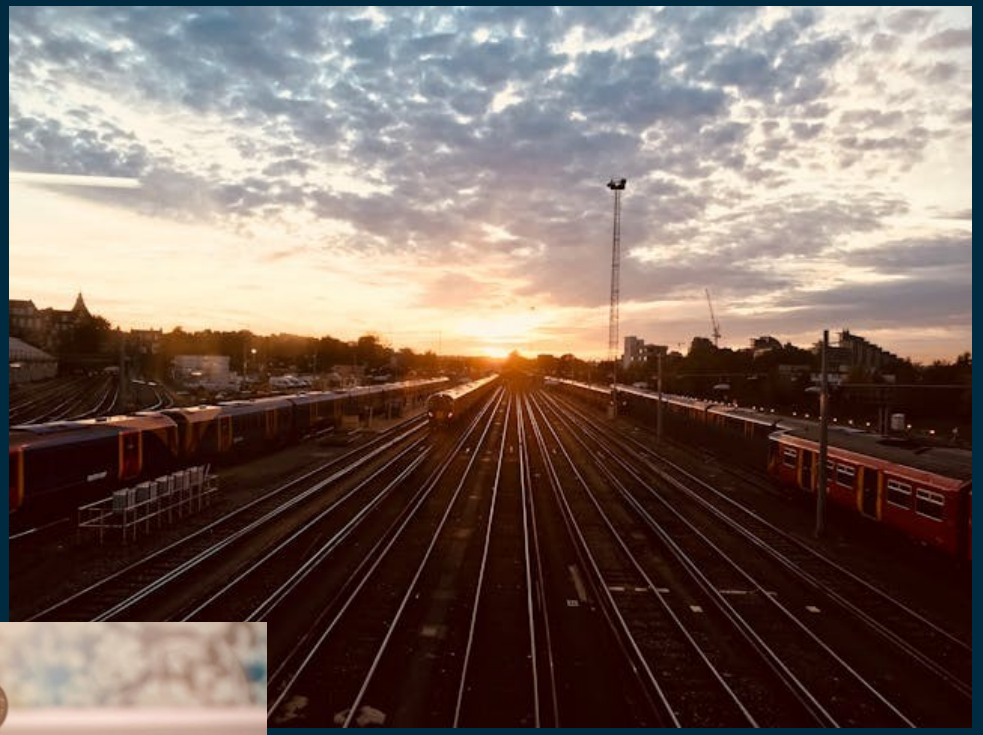


```
     *     @type array        $category__not_in      An array of category IDs (NOT in).
     *     @type string       $category_name         Use category slug (not name, this or any children).
     *     @type array|int    $comment_count         Filter results by comment count. Provide an integer to match
     *                                               comment count exactly. Provide an array with integer 'value'
     *                                               and 'compare' operator ('=', '!=', '>', '>=', '<', '<=' ) to
     *                                               compare against comment_count in a specific way.
     *     @type string       $comment_status        Comment status.
     *     @type int          $comments_per_page     The number of comments to return per page.
...
        )

        // Matching by comment count.
        if ( isset( $q['comment_count'] ) ) {
            // Numeric comment count is converted to array format.
            if ( is_numeric( $q['comment_count'] ) ) {
                $q['comment_count'] = array(
                    'value' => intval( $q['comment_count'] ),
                );
            }

            if ( isset( $q['comment_count']['value'] ) ) {
                $q['comment_count'] = array_merge( array(
                    'compare' => '=',
                ), $q['comment_count'] );

                // Fallback for invalid compare operators is '='.
                $compare_operators = array( '=', '!=', '>', '>=', '<', '<=' );
                if ( ! in_array( $q['comment_count']['compare'], $compare_operators, true ) ) {
                    $q['comment_count']['compare'] = '=';
                }

                $where .= $wpdb->prepare( " AND ({$wpdb->posts}.comment_count {$q['comment_count']['compare']} %d",
$q['comment_count']['value'] );
            }
        )

        // MIME-Type stuff for attachment browsing
```

What this talk is not about

https://www.imdb.com/title/tt0701083/mediaviewer/rm2559510528/

What this talk is about



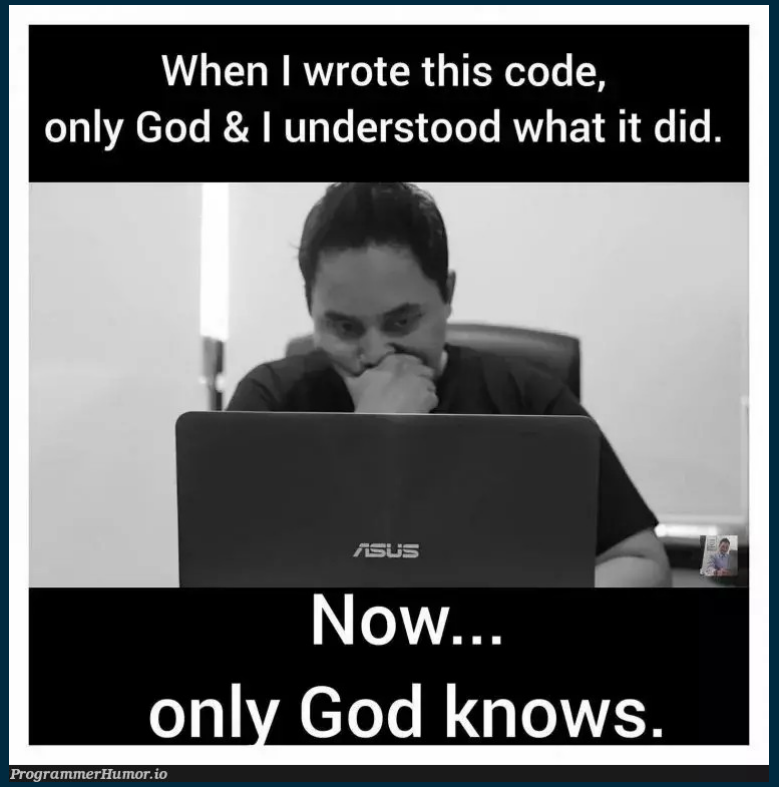
But first, the dictionary

“Capable of being maintained or continued at a certain rate or level.”

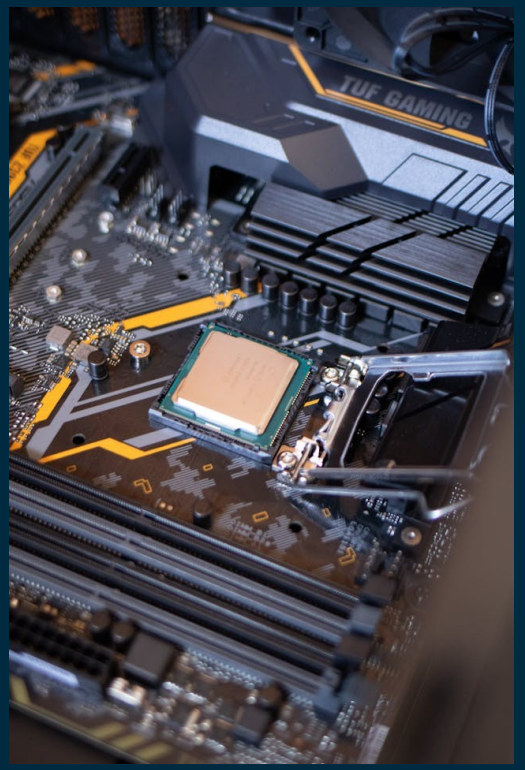
“Designating forms of human activity (esp. of an economic nature) in which environmental degradation is minimized, esp. by avoiding the long-term depletion of natural resources”

Let's start with websites
(Because building stuff is awesome)

```
switch (true) {
  case $shorts && !$videos:
    $command .= '/shorts';
    break;

  case !$shorts && $videos:
    $command .= '/videos';
    break;
}
```



How CPU (processor) speed and PHP really work



Core
GhZ

Watt

Speed

Therefore, know your CMS!

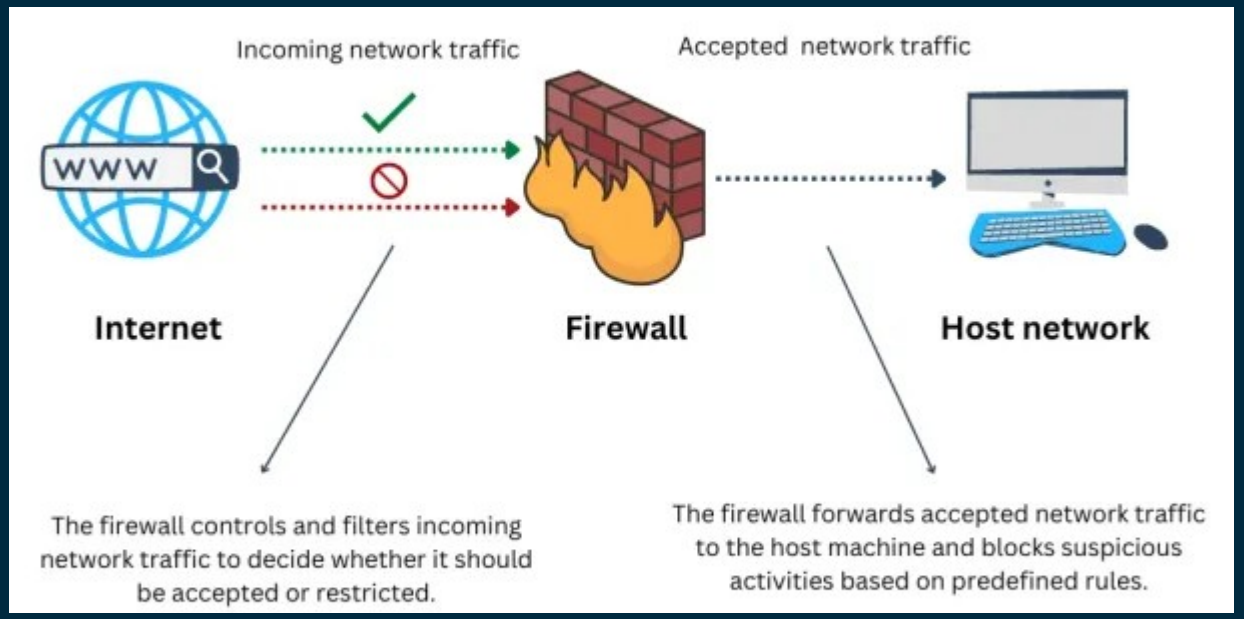
A WP PHP request travels: index.php ↘ wp-config.php ↘ wp-settings.php ↘ BOOM Magic {rainbows and unicorns}

wp-settings.php:

↘ load default stuff
↘ shortinit
↘ perhaps HTML page cache
↘ mu-plugins
↘ plugins
↘ themes
↘ wp_init

Also, next to smart code:

Use PHP APC/Opcache, redis/Valkey, varnish, HTML/page cache, CDN, ..
But also internet and content firewalls (it goes both ways).



https://research.aimultiple.com/firewall-vs-proxy/

Making your code ~~smart~~ more sustainable

```php
<?php

if( some_very_slow_function() && $var_that_might_exist ) {
        // Do stuff here
}
```

```php
<?php

if( $var_that_might_exist && some_very_slow_function()) {
        // Do stuff here
}
```

Turn this ...

```php
<?php
// This takes 10 seconds
$results = new WP_Query( 'cat=5&order=random&tag=tech&post_meta_key=thumbnail' );

if ( $results->have_posts() ) {
        while ( $results->have_posts() ) {
                // Do stuff
        }
}
wp_reset_postdata();
```

.. into this!

```php
<?php
$key = 'my_transient_key';
// https://developer.wordpress.org/apis/transients/
if ( false === ( $results = get_transient( $key ) ) ) {
        // It wasn't there, so regenerate the data and save the transient
        // This takes 10 seconds
        $results = new WP_Query( 'cat=5&order=random&tag=tech&post_meta_key=thumbnail' );
        set_transient( $key, $results, 2 * HOUR_IN_SECONDS );
}

if ( $results->have_posts() ) {
        while ( $results->have_posts() ) {
                // Do stuff
        }
}
wp_reset_postdata();
```

Cache ~~all the~~ expensive things!

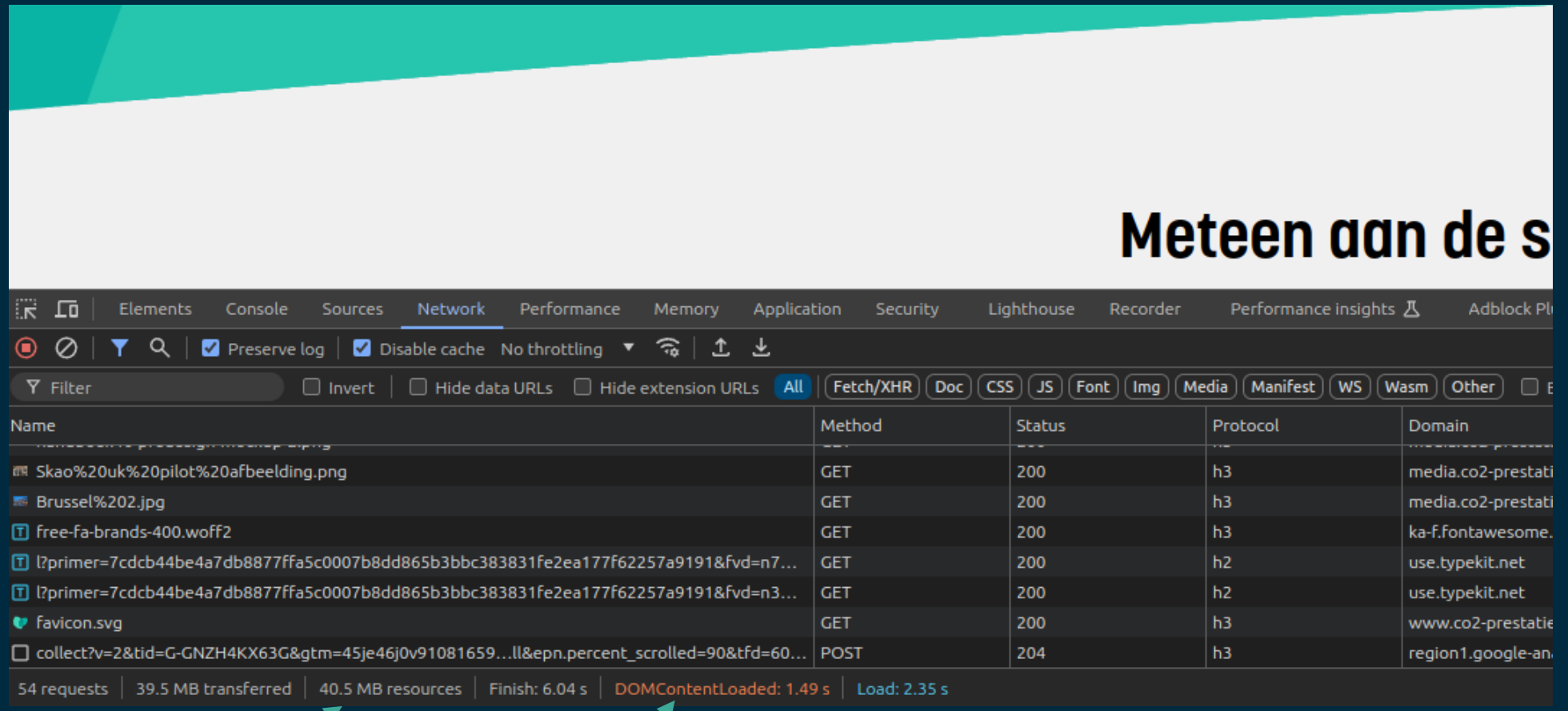
Next to Page Cache and Dynamic Page Cache,
↘ D8 has CacheableDependencyInterface

[Max-age, context and tags] === ‘your friend’

Info and examples:
https://www.drupal.org/docs/drupal-apis/render-api/cacheability-of-render-arrays
https://www.drupal.org/docs/8/api/cache-api/cacheabledependencyinterface-friends

https://www.drupalatyourfingertips.com/caching

Low hanging fruit (aka doing stuff right)

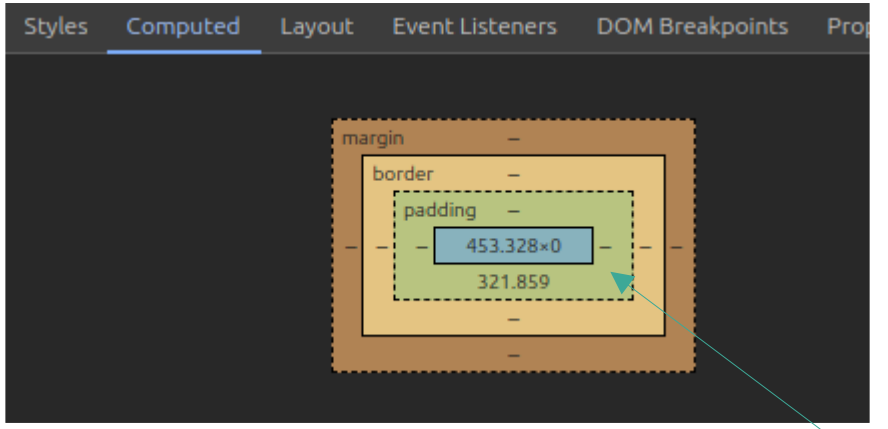


20 juni 2024 12:16

HEIJMANS INTRODUCEERT AFVALMONITOR IN SAMENWERKING MET RENEWI

11 juni 2024 12:00

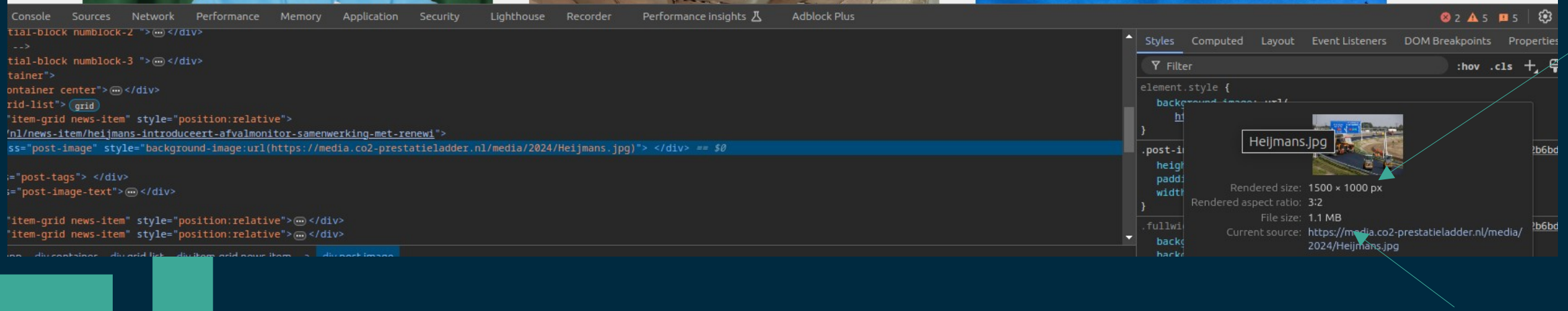
VAN TIENTALLEN MAATREGELEN NAAR EEN DOELGERICHT PLAN RICHTING NUL UITSTOOT



EMISSIES VOOR BOUWSEC

Prestatieladder

Meld je aan



Could'nt resist to calculate a single image

You can CDN all you want but … you are still sending 1.500.000 pixels (1500*1000 pixels) **1.1 MB** filesize per image.

That is presented at .. 148.584 pixels (453*328 pixels) which is 10 times less pixels.

I have done some maths on that size:

- png = 285 kb (**4 times smaller**)
- jpg 90% = 71.7 kb (**15 times smaller**)

So ...

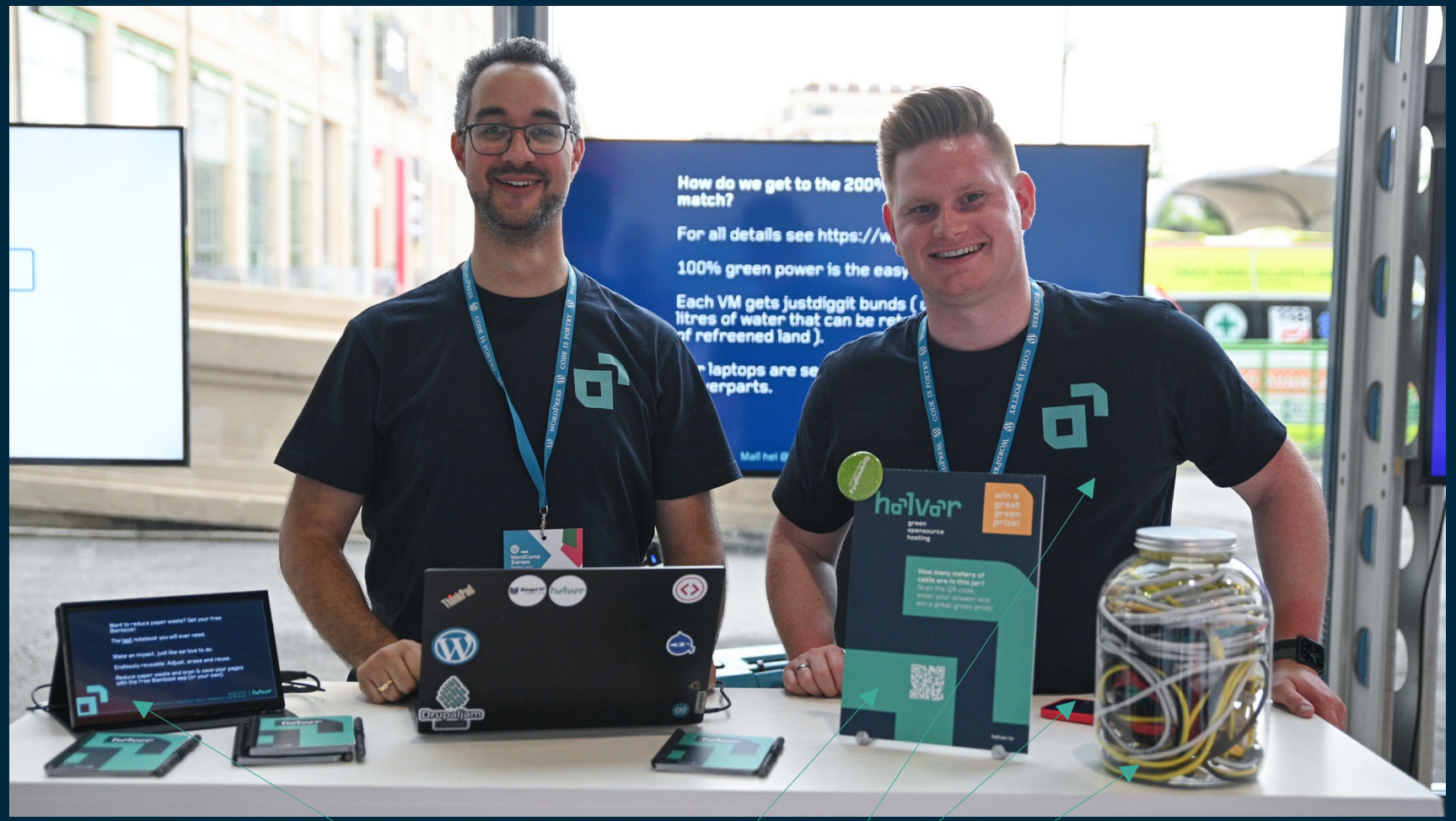
↘ Panda/Smush is nice but ... *please* select/upload the (approx.) pixels you intend to use

↘ Where possible: webp/avif formats

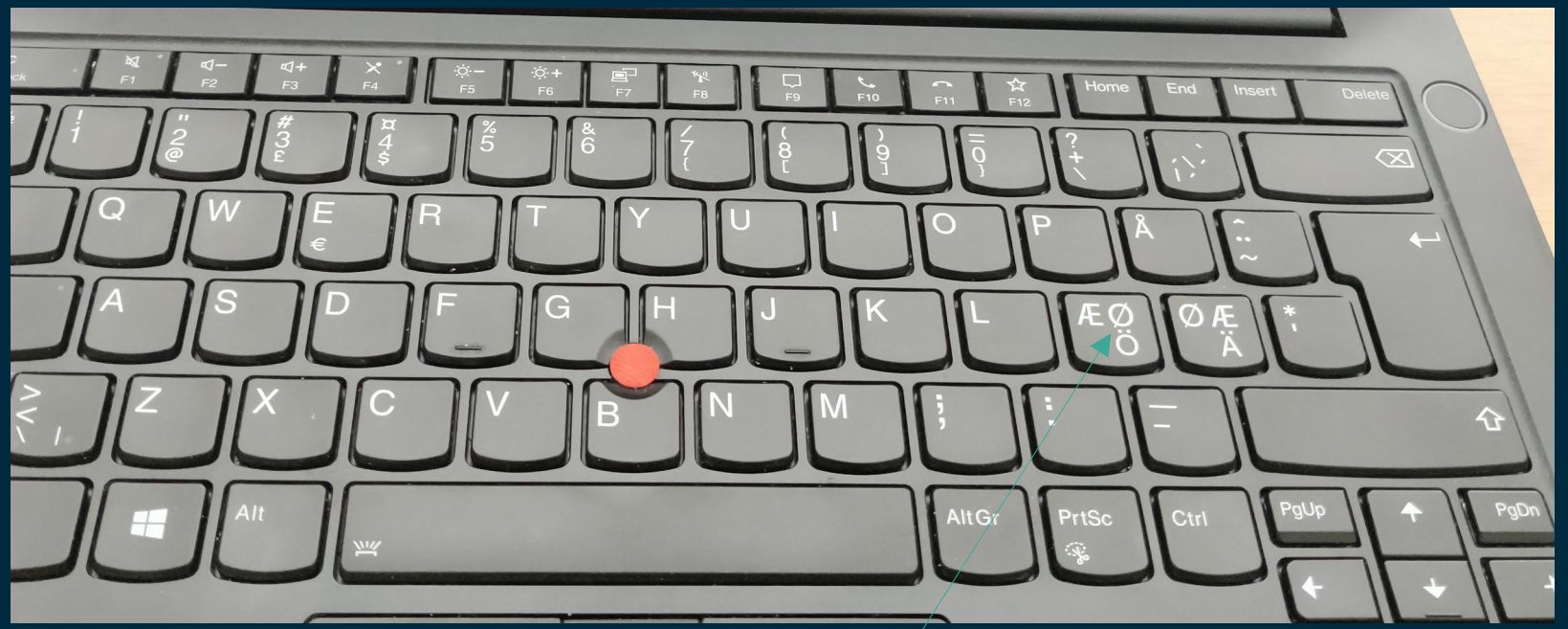
↘ Use a green webhost (and I mean really green, not just green energy/Green web foundation)
Question: Does anyone know why green power is easy ?

↘ Use caching (remember Varnish and CacheableDependencyInterface and friends)

Gear, goodies and promotion materials



Gear, goodies and promotion materials



It pays off :)

DrupalCon
Be Human, Think Digital
First prize winner at DrupalCon 2024 for the most sustainable exhibitor based on our sustainable travels, stand and goodies!

Also … it gives nice views

So ... why do trains rock anyway ?

Next to very low pollution (next slide)

- ↘ No restrictions on food or drinks
- ↘ No need for customs
  (and getting 2 to 3 hours before flight)
- ↘ No trolley/suitcase weight restrictions
  (you *will* have to carry it yourself)
- ↘ Decent legroom
- ↘ Power sockets
- ↘ WiFi
- ↘ Arrive well rested or with work done
- ↘ No fear of heights or turbulence
  (so .. no violently shaking toilets)

Any drawbacks?

↘ No last minutes, **only early bird**

Example: Rotterdam to Paris
(nsinternational.com)

This month: 151 euro tomorrow, 89 cheapest
Next 3 months: 68-84 highest, 35-55 cheapest
Amsterdam to Barcelona +- 5% more than plane.

↘ Sometimes you need a layover

↘ A bit more work to find routes/connections

Let's go back to the start: *All* travel has impact

So … Do not travel, or .. take the …

↘ Bike
↘ Train
↘ Bus (Flixbus also has very low rates for early birds)
↘ Car share , even via Blablacar or Snappcar
↘ Taxi, Uber has an option to get electric cars only 🙂
↘ Hybrid (a combination)
↘ Take the plane / cruise-ship (ahum..) anyway, but compensate all footprint (can even be done with flixbus)
↘ Avoid flights with plane-transfers as you will pollute twice (or more) to get up in the air. Fly non-stop if you can, see screenshot from google flights

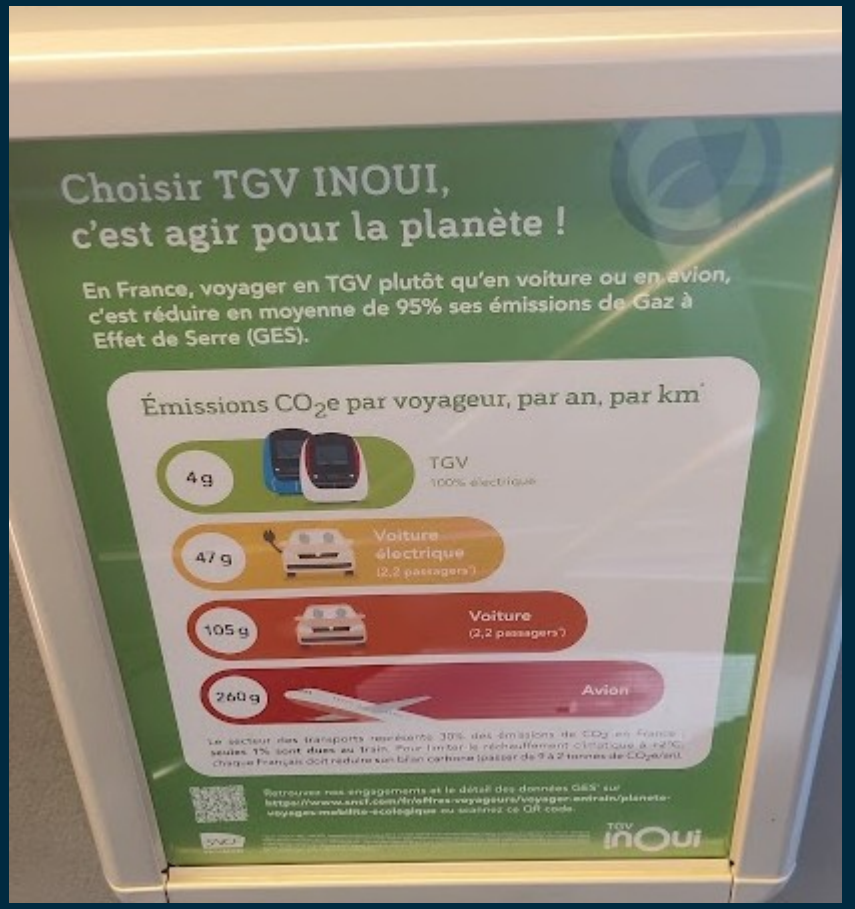
All travel has a big impact

Single trip Amsterdam – Barcelona

Total Bus & Rail Footprint = 0.01 tonnes of CO_2e **Offset Now**

Total Flights Footprint = 0.35 tonnes of CO_2e **Offset Now**

1 stop 5 hr 55 min LTN	165 kg CO2e +53% emissions
Nonstop	98 kg CO2e -9% emissions



Make it easy on yourself:

- Buy a train off-peak-hours subscription
- Install the flixbus app (or any other)
- Pick your hotel near your congress venue, or well connected with public transport
- Offset your travels and ICT via Justdiggit (or any other)

Reduce your hardware impact

- Laptops, PC's mobile phones and other equipment
  If applicable: servers
- Re-use (but take care of software security updates)
- Keep using, just buy partial upgrades
- Sell, give away and repair (also: insurance)
- Refurbished versus second hand such as ebay amazon, marktplaats or auctions.

More sustainable business

halvar

ramon fincken
+31 (0)85 00 47 830
ramon.fin@halvar.io

asn bank

Last but not least: Who of you loves Open Source Software?

And/or do you make money out of free/open source ?

Keep the fire going, **contribute**!

↘ Share your knowledge

↘ Contribute to the project

↘ Donate money

↘ Volunteer

The ~~party~~ sustainability goes on

If you have any questions, ask me now, at the borrel or email us: **hei @ halvar.io**

We will make time to discuss your sustainable challenges and show you way more then we could on stage today :)

https://www.halvar.io/s/meetup/

Halvar hosting

GDPR / AVG / DSVGO-safe Open Source hosting
that is also **200 % sustainable.**

Go crazy with installing whatever you want:

Drupal, Symphony, WordPress, Cake,
Matomo, PhpBB, your custom CMS, ..

We even offer pure static HTML hosting.

How do we get to the 200% green energy match?

For all details see https://www.halvar.io/faq/

100% green power is the easy part

Each VM gets justdiggit bunds (up to 10500 litres of water that can be retained and 620m2 of refreened land).

Our laptops are second hand so as some of our serverparts.

How do we get to the 200% green energy match? (cont.)

For all details see https://www.halvar.io/faq/

We travel by train and bus (Amsterdam – Turins as well).

We have 1 NFC / QR business card each.

Even our bank (ASN bank) is only investing in sustainable projects.