

Presentation by

The SustainabilityTeam

Who

Alex, Koupam, Joe, Aleix, Vesna

What

Results:

We have an abstract for the paper as well as a quite elaborate index that's still being worked on. There is no finalised draft because we still find things to add that are in the scope of the paper.

In typical fashion, just like finding a username is hard, this paper has no final title nor a working title, only a list of more or less serious options to spark further ideas. For the time being, the title is left as an exercise to the reader.

Why

Our goals are minimising unnecessary DNS traffic, defining what sustainability is in the context of our paper, building an understanding into what's necessary and what isn't, as well as the issue of the subjectivity of necessity.

We aim to improve the efficiency of DNS and reduce emissions and hope to inspire potential readers to analyse their own areas of competence for potential ways to improve efficiency and sustainability, whether they're developers, operators or end users. We try to outline the tools needed to improve DNS sustainability as well as the ways in which everyone can have an impact - even if it is small, it adds up.

We try to address the elephant in the room: Excessive DNS traffic seems like a very small problem in comparison with the biggest issues, but over time, many small efforts can add up to a considerable amount of change.

We introduce our readers to the existence (and causes) of excessive DNS traffic, to DNS background noise and take a detour into the popular narrative of the personal carbon footprint as well as several other topics and end with recommendations to three groups of people that can all have an impact - developers, operators and end users.

We come forward with ideas for incremental change, with radical proposals and a number of suggestions in-between.

How

What did you learn?

Alex:

Sustainability stays a complex and vast topic, hard to keep faith however as soon as we reduce something we're on the good track

Koupam:

To effectively measure the carbon footprint of DNS queries, it is challenging due to various factors. However, it is crucial to optimize DNS traffic by minimizing unnecessary queries and focusing only on essential DNS traffic.

Joe:

Many readers will be skeptical; that this effort unnecessary: DNS impact is probably very tiny so why bother? But ... little things add up. DNS Background noise is significant.

Aleix:

I learned about ideas regarding the categorisation of DNS queries and gained a deeper understanding into what "necessity" is, how subjective it is and when it comes to filtering DNS queries I feel that I moved further toward the point of knowing enough to know that I know barely anything - and now with the understanding that solving this will be hard due to the difficulty of finding absolute statements about subjective topics.

Vesna:

Environmental impact of DNS is small by itself, but as an important part of Internet industry "Green DNS" could be an inspiration for others to "do the right thing".

What went well/not so well?

What went well is the teamwork, communication and cooperation as well as the delegation of tasks within the team. We have a good outline for our paper and more than enough areas to work in should we have temporarily depleted our focus in another - but for now, the ideas are flowing.

What didn't go so well is the effort to collect and visualise data as we discovered that the goal is way out of scope for the Hackathon and more on the level of a grad student project. Work in the area as a whole still went halfway well since we found many aspects of our work that we could visualise. Another thing that didn't go so well was sticking to the times we wanted to change to the next activity because we simultaneously lost track of time, but I believe we managed well enough.

Where next?

Developing ways to efficiently communicate and work together remotely, examine prior work of others, try to talk to people who already have worked on this topic, create a draft and a final draft of the paper, make a final final draft, end on final final draft 2 and then move on to publishing!