

Proxy Solid Server NLNet Application

By [Noel De Martin](#)

This document contains the same information I submitted in the [NLNet website](#) for the call of October 1st, 2024. It only has one additional section, [Timeline and other proposals](#), and it is more readable because I'm using hyperlinks rather than plain text.

Abstract

Can you explain the whole project and its expected outcome(s).

I have been making Solid Apps for years, and the number 1 problem holding me back has been the lack of a Solid Server that I can recommend to end users. Most solutions are too experimental, targeted at developers, or enterprise-focused.

In this situation, the only viable option is to become a POD provider yourself. But that's a catch-22, because you either restrict it to your own apps (in which case what's even the point of using Solid), or you're now responsible for people's sensitive data (which is what you wanted to avoid in the first place).

Additionally, people may be hesitant to entrust their data to an unknown entity. It would be ideal if they could use the storage they already have; like Nextcloud, Google Drive, or Dropbox. This would also help them understand how Solid gives them ownership of their data. But doing so, would couple their identity to these third parties; and these providers don't support the Solid Protocol API.

The solution is to create a proxy between apps and cloud providers, allowing users to choose a domain they control (or a reserved subdomain); which would leave the door open for upgrading to a full-fledged Solid Server in the future.

Background

Have you been involved with projects or organisations relevant to this project before? And if so, can you tell us a bit about your contributions?

I have been making Solid Apps since 2019, you can learn more about my journey with Solid in a talk I gave at FOSDEM 2023: [From Zero to Hero with Solid](#).

All this time, I have been working a 4-day workweek in my day job, so everything I've done has been a side-project. Recently, I decided to move on from my job, and focus my efforts in Solid full-time. You can also find more about that in this blog post: [The End of The Chapter](#).

Here are some highlights of my contributions in the Solid community:

- I created a library implementing the Active Record design pattern: [Soukai](#).
- I released 3 apps
 - [Solid Focus](#) (a Task Manager, currently [rebuilding it from scratch](#))
 - [Media Kraken](#) (a Media Tracker)
 - [Umai](#) (a local-first Recipes Manager)
- I gave some talks:
 - [Media Kraken](#) (Solid World February 2021)
 - [From Zero to Hero with Solid](#) (FOSDEM 2023)
 - [Thoughts on Solid Developer Experience](#) (2nd Solid Symposium)
 - [Solid CRDTs in Practice](#) (2nd Solid Symposium)

Other than these, I've also been working in the open and you can find more content in my [blog](#), [journal](#), and [YouTube channel](#).

Costs and Sustainability

Requested Amount: 50.000€

Explain what the requested budget will be used for? Does the project have other funding sources, both past and present?

The main cost for this project will be my own labor, given that I intend to work on it full-time and I don't have any other sources of income. So far, all the work I've done related to this has been supported by my 4-day workweek, and I haven't asked for any financial contributions.

Besides that, I am able to do most of the work necessary to complete the project on my own; but I'd like to get some external help in areas I'm not an expert in. In particular, design and marketing. This won't be a huge part of the project, but there are many things besides the code that I believe are important for the success of the project (UX, landing page, website, branding, etc.).

Beyond this initial period, my intention is to make it into a self-sustainable project that doesn't rely on grants. The most straight forward model for this project would be to charge end users depending on their usage, but that could seriously harm its adoption. Another approach would be to charge app developers, but that suffers from similar issues.

It goes without saying, but of course everything that comes out of this initial period will be open source. However, the licensing model will depend a lot on the market response. This is something I hope to get some help from NLNet if the project moves forward.

Comparison to existing solutions

Compare your own project with existing or historical efforts.

There are currently many Solid Servers in the market, but [there is a clear lack of solutions in the B2C space](#). Or said differently, there aren't any servers I would recommend to someone foreign to Solid who just wants to start using an app.

I have tried many of the existing servers myself, and I've kept a list of their current status in a sample application I made called [Ramen](#).

On the one hand, we have some open source servers. The most notable are probably NSS and CSS:

- [NSS](#) (Node Solid Server): This is the original Solid Server, and even though it's still the most used in production, it has been struggling for contributors and the codebase is outdated. I was a regular participant in the [SolidOS](#) meetings, which is the group in charge of the project, and I'll probably join again in the future. So I'm well aware of their situation and roadmap.
- [CSS](#) (Community Solid Server): This is the most robust Solid Server (at least looking at the Open Source solutions), and it's slowly gaining market share. It's written in TypeScript, and it's regularly maintained. However, the UI is quite lean and it's targeted at developers and researchers. Its modular nature makes it potentially usable for end users as well, but that requires some work.

On the other hand, we have some enterprise servers such as [ESS](#) and [TrinPod](#). Even though most of them have free plans that individuals could use, I haven't been able to find one that is friendly enough for newcomers (specially for non technical people).

I'm also aware of some efforts funded by NLNet, such as:

- [Solid-Nextcloud](#): This may be the closest thing to what I have in mind, but it has the drawbacks that it only supports Nextcloud and it's implemented as an extension. This means that Nextcloud admins are the only ones capable of enabling it, so it doesn't fulfill the promise that anyone with a Nextcloud account could use a Solid App. Also, it doesn't support custom domains.
- [Manas](#): This is a Rust server, and it's the one I'm the least familiar with. I haven't been able to find a running instance online, and I haven't bothered trying to run a local instance (since CSS already solves my necessities as a developer). If we move forward with the project, I may explore it further; but my impression is that it's also targeted at technical users and wouldn't be usable without some work.

In this landscape, I believe there is a gap for a server targeted at end users with a focus on good UX. I haven't started working on this yet, so one possibility would be to build my solution on top of some of the existing projects. In particular, [the work being done by the PDSInterop team](#) is very aligned with my preferred stack (PHP); so it's possible that I end up reusing some of their components and contributing my improvements upstream.

Technical challenges

What are significant technical challenges you expect to solve during the project, if any?)

The main technical challenge would be to implement a spec-compliant Solid Server, which I have no experience with. Thus far, I've focused my work in Solid on the client side, so I'm unsure how much of a challenge this will be.

However, [I have already done a proof of concept](#) that seems promising, and there are plenty of open-source servers I can explore in case I get stuck with some implementation details. There is also a couple of testing suites that will help me make sure that my implementation is compliant, the [Conformance Test Harness](#) and the [Test Suite](#).

Another challenge in this project will be to fulfill the promise of making it user friendly for people unfamiliar with Solid. I have some ideas on how to do that, but this will probably need a lot of explorations and user research.

Marketing strategy

Describe the ecosystem of the project, and how you will engage with relevant actors and promote the outcomes?

As I described in the [Comparison to existing solutions](#), there isn't currently a Solid Server that I would recommend to newcomers. I have been involved in the Solid community for a while; so I'm confident most people will notice my work. Whether it gets traction or not will depend on the quality of the solution, and the willingness of the market to adopt the new paradigm.

One adoption strategy I have in mind is providing a widget that developers can inject in their frontend code. In the same way that Stripe makes it easy for developers to implement payments, I intend my solution to make it easy for Solid developers to implement authentication. There is already [an authentication library for Solid](#), but it only implements the business logic for logging in; it doesn't offer any UI nor mechanisms for signing up. My idea with this widget would be to provide a complete login experience, so that users can either log in to their existing server, or create a new account using cloud storage (Nextcloud, Google Drive, or Dropbox).

I'll also continue working in the open, and probably ratchet up my involvement in community events and conferences. Which should help more developers aware of my solution. Ultimately, applications could be the best promotion channel; because users won't come looking for a Solid Server if there isn't an application they want to use.

Timeline and other proposals

Please note that I intend to start working on this in January 2025, given that I'm currently on a sabbatical and thinking what to do after quitting my job.

You'll notice that I've also submitted 2 other proposals: one for an app framework (Aerogel), and one for making better Solid Apps. I'll only be able to work on one project, but I wanted to submit all 3 ideas because I'm interested to hear what you think.

The app framework is the proposal I'm more excited about, but if you think it's too risky, I'm willing to explore the other two. I'm also open to merging multiple proposals into one if it seems feasible.