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BLOG



PINAS V2 – DESIGN PROGRESS (HDD CAGE & CADDIES VALIDATED)

Author(s): Louis Ouellet

PiNAS is back — and this time, it’s more than just an iteration.

Over the past few weeks, I’ve been deep into redesigning my Raspberry Pi-based NAS from the ground up. What started as a simple idea quickly turned into a series of design challenges, print tests, and unexpected lessons.

This article isn’t just about what works — it’s about what didn’t, what changed, and why.

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2026/03/24 20:18 · Louis Ouellet · 0 Comments
3d-printing, project, raspberrypi, pinas, raspberry pi, nas, homelab, 3d printing, 3d design, diy, hardware design, prototyping, modular design, storage, sata



WHEN IT'S NOT THE NETWORK: AN RDP INVESTIGATION THAT LED ELSEWHERE

Author(s): Louis Ouellet

In a recent deployment, I was asked to investigate unstable Remote Desktop (RDP) sessions to a remote server accessed over a site-to-site VPN.

At first, the explanation sounded simple: the VPN was unstable. Users were being disconnected,

the target server was remote, and all the symptoms seemed to point in the same direction.

On paper, the environment was straightforward:

- Local network: `192.168.115.0/24`
- Remote network: `192.168.201.0/24`
- Original VPN: IPsec
- Temporary replacement VPN: WireGuard
- Target server: `192.168.201.100`
- Multiple users connecting via RDP

But as is often the case in infrastructure work, the first explanation turned out to be the most convenient one — not the most accurate.

> This is one of those cases where everything looks like a network issue — until you start proving what is, and is not, actually failing.

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2026/03/22 20:36 · Louis Ouellet
general, blog, rdp, network, wireguard, investigation, security, windows, linux



REDISCOVERING ENGINEERING THROUGH 3D PRINTING

Author(s): Louis Ouellet

I didn’t buy a 3D printer to print toys. I bought it to prototype systems.

In early October, I added a BambuLab P1S to my lab. Most people start with a Benchy — a calibration cube, a cable clip, something small and forgiving. I opened FreeCAD and started designing a NAS enclosure from scratch.

Probably not the most subtle first print.

But I wasn’t interested in printing trinkets. I wanted constraints. I wanted tolerances. I wanted airflow questions, structural rigidity concerns, screw alignment problems, and the kind of iterative refinement that forces you to think before you click “print.” I wanted to push engineering muscles I hadn’t used since high school — the ones that make you consider load distribution, clearances, material thickness, and assembly order.

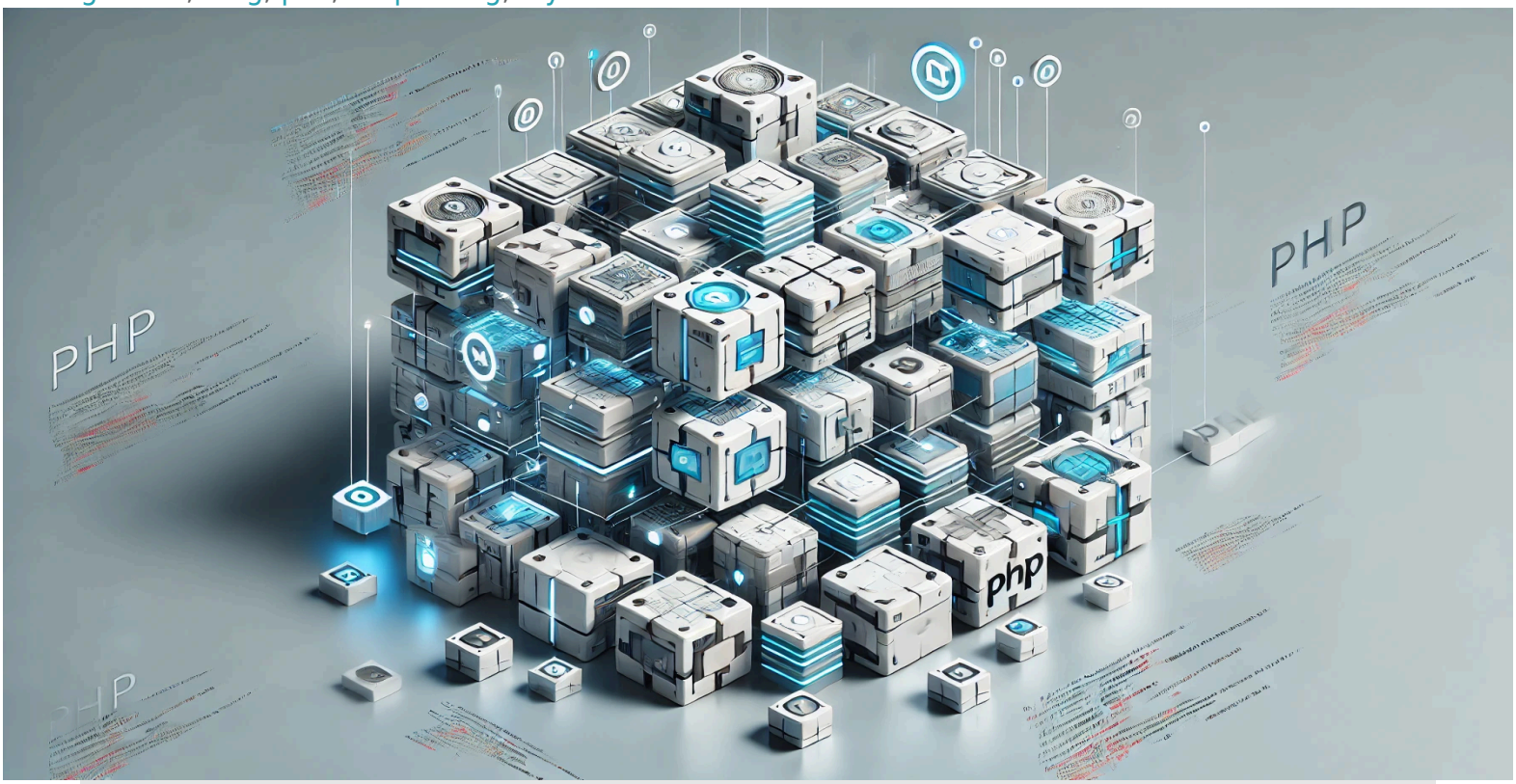
For years, most of what I build has been invisible: servers, scripts, infrastructure diagrams, automation pipelines. Systems that live in racks or in the cloud. With 3D printing, for the first time in a long time, I could design something in the morning and physically hold the result in the evening.

Something functional. Something structural. Something real.

That decision — to start with a NAS enclosure instead of a novelty print — set the tone for everything that followed.

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2026/02/14 12:22 · Louis Ouellet
general, blog, p1s, 3d-printing, diy-kits



LET'S TALK - BUILDING A MODULAR PHP FRAMEWORK PART 3

Author(s): Louis Ouellet

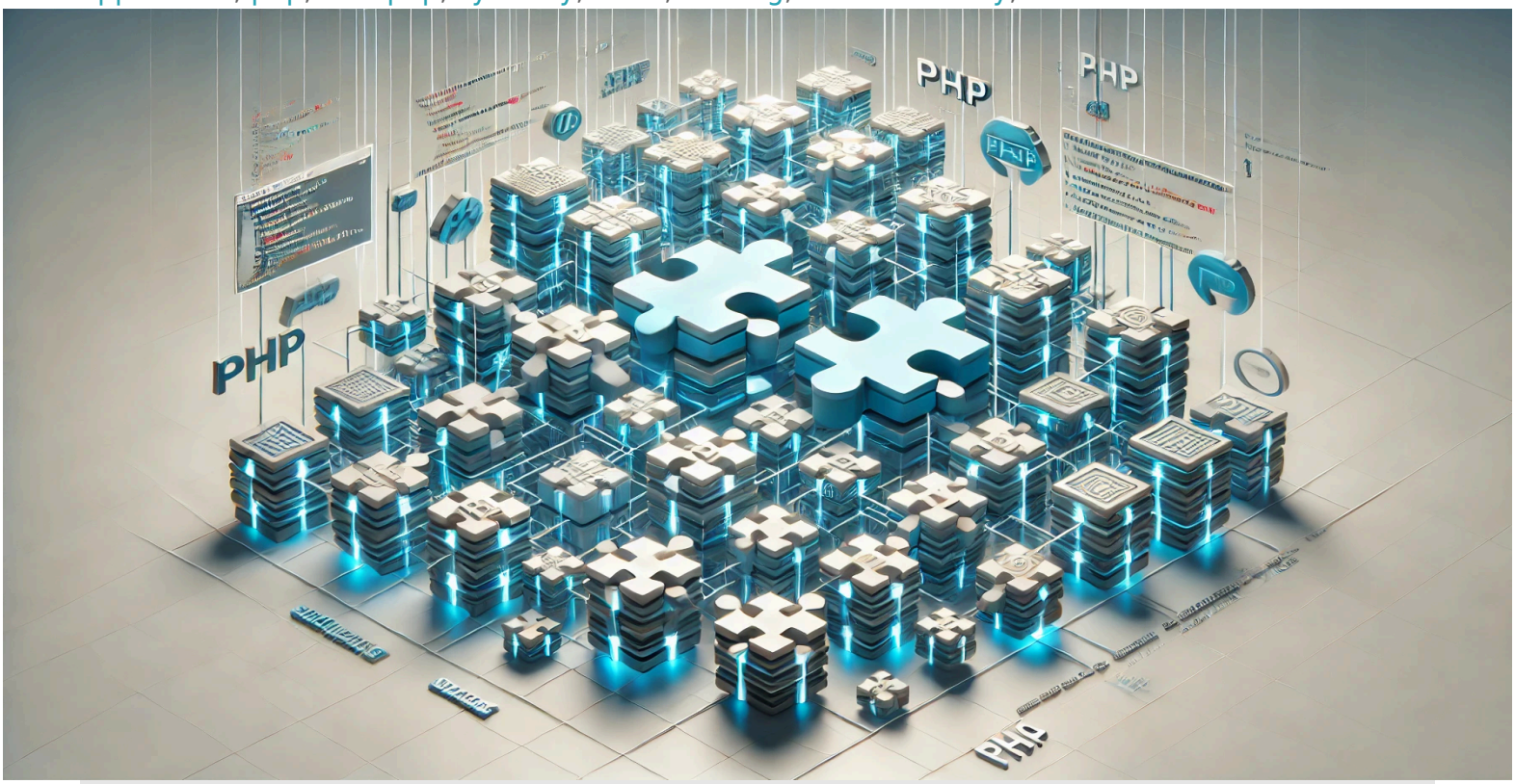
In this third installment of our **Building a Modular PHP Framework** series, we will cover:

- Cross-Site Request Forgery (CSRF)
- API and Endpoint creation
- Database Handling including:
    - Managing the database structure using Schema
    - Managing database queries using Query

We'll build upon the groundwork set up in the previous parts, focusing on security (CSRF), setting up API routes, and more advanced database handling.

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2025/02/03 16:18 · Louis Ouellet
general, core-framework-en, framework, core, modularity, modular, module, lightweight, application, php, cakephp, symfony, learn, leaning, maintainability, maintain



LET'S TALK - BUILDING A MODULAR PHP FRAMEWORK PART 2

Author(s): Louis Ouellet

Time for part 2! In our previous part, we set up the groundwork of our modular PHP framework. This time, we will focus on expanding its capabilities to support the following objectives:

- Add support for extensions
- Begin implementing a Command-Line module
- Add support for models to be used to create shared methods that require a database
- Add support for helpers to be used to create shared methods that do not require a database

These enhancements will provide the flexibility we need to build modular, maintainable, and extensible applications. Let's walk through each update step by step.

Read more

2025/01/28 08:53 · Louis Ouellet
general, core-framework-en, framework, core, modularity, modular, module, lightweight, application, php, cakephp, symfony, learn, leaning, maintainability, maintain



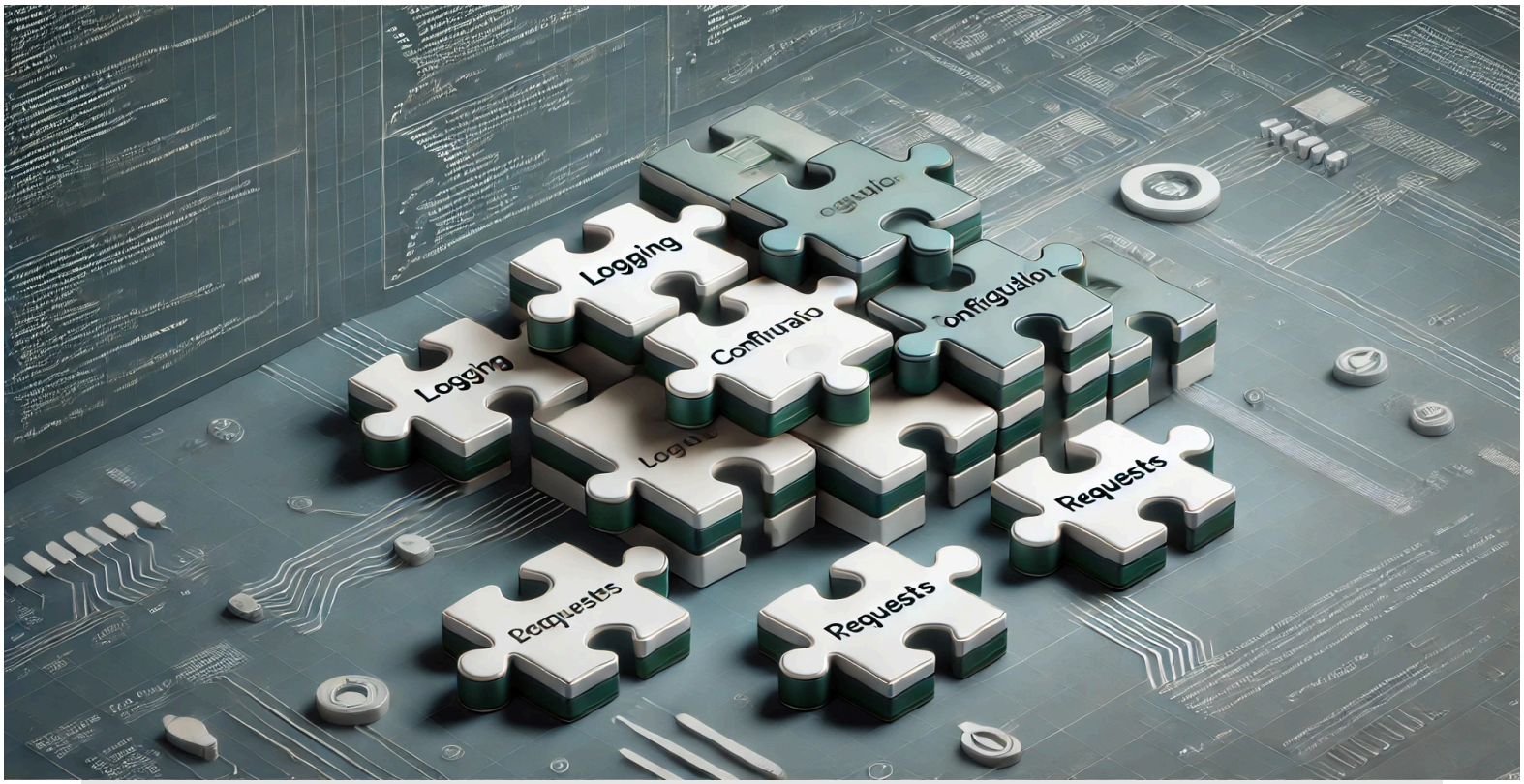
LET'S TALK - WHY AND HOW I USE ARTIFICIAL INTELLIGENCE

Author(s): Louis Ouellet

So, if you haven't lived under a rock, you should know by now about the existence of AI (Artificial Intelligence) and LLMs (Large Language Models). They have become integral parts of many creative and technical workflows, and they’re here to stay.

Read more

2025/01/27 16:46 · Louis Ouellet
general, ai, llm, artificial intelligence, large language modal



LET'S TALK - BUILDING A MODULAR PHP FRAMEWORK FROM SCRATCH

Author(s): Louis Ouellet

Have you ever worked with popular PHP frameworks like CakePHP or Symfony and thought, “I wonder how these were built?” PHP frameworks can be tremendous time-savers, but they are truly powerful only when you know them inside and out. Developing your own mini-framework can be a great learning exercise, giving you deeper insight into best practices, modularity, and maintainability.

In this article, I share how I’ve started building my own PHP framework from the ground up. This includes constructing a Bootstrap class, handling configuration, setting up modules, creating a logging system, and finally wrapping requests into a tidy Request class. By walking through each piece, you’ll see the value of a well-structured, modular approach that can be extended with custom modules as needed.

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general, core-framework-en, framework, core, modularity, modular, module, lightweight, application, php, cakephp, symfony, learn, leaning, maintainability, maintain



REPURPOSE OLD PRINTERS USING A RASPBERRY PI

Author(s): Louis Ouellet

In this project, we will repurpose an old Canon Color ImageClass MF8350CDN printer using a Raspberry Pi. Since Canon no longer supports Windows 11 for this device, using a Raspberry Pi as a print server allows us to extend the printer’s lifespan. It also enables features such as AirPrint for convenient wireless printing from Apple devices.

Below is a step-by-step guide to:

- Set up a Raspberry Pi with the necessary software

- Install and configure the Canon printer drivers
- Use CUPS for print management
- Enable AirPrint for iOS devices
- Configure Samba for a shared folder (useful for scanned documents)
- Install and configure a Python Startup Monitor

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2025/01/20 12:49 · Louis Ouellet
tutorials-raspberrypi, raspberry-pi, cups, samba, server, airpint

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