UNRAID

Team 6 — UnRAID NAS

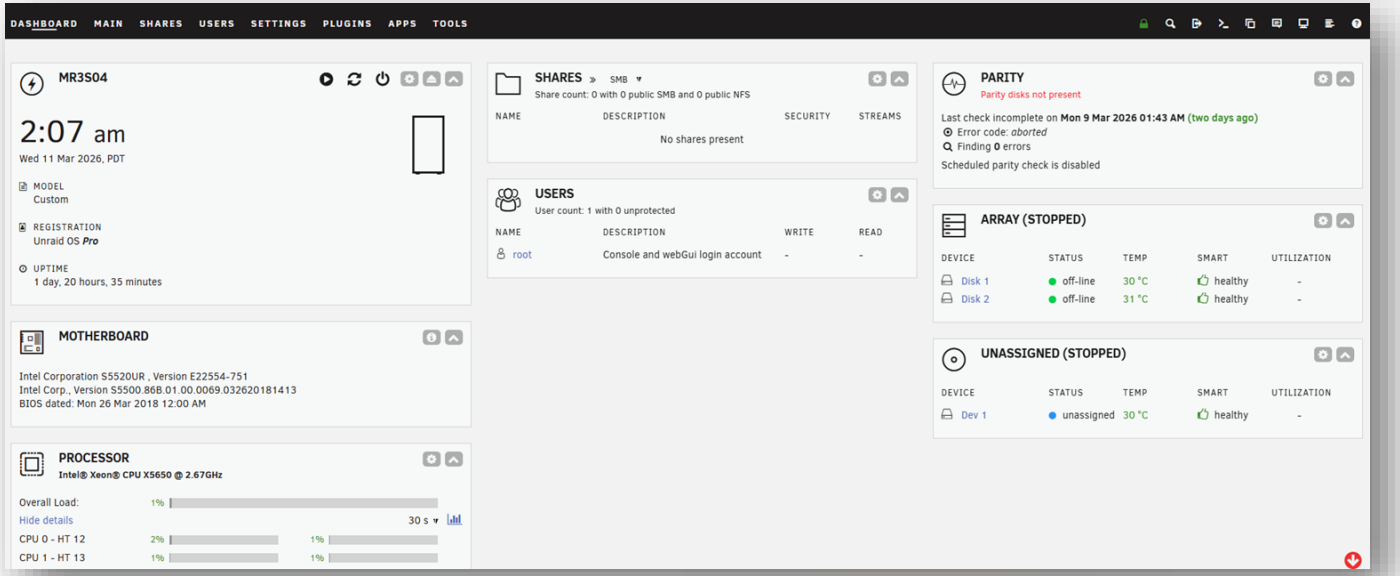
Andrea Girotto | Guilherme Videira Marques

Server MR3S04 | CLOIF2 | 13.04.2026

Linux-based NAS • Parity Storage • Docker & VMs • Plugin Ecosystem

What is UnRAID?

- Commercial, Linux-based NAS OS by Lime Technology
- Runs entirely from a USB stick — OS never touches data disks
- Licence is hardware-bound to the USB's unique ID
- Web-based management (no CLI needed for daily use)
- Supports Docker containers and VMs natively
- Extensible with community plugins (Community Apps store)
- Own storage model: parity-based, disks stay independent



Only paid NAS OS among the four tested in this class

UnRAID Licensing

Starter	Unleashed	Lifetime
$49	**$109**	**$249**
one-time	one-time	one-time
Licence **Perpetual**	Licence **Perpetual**	Licence **Perpetual**
Storage **6 devices**	Storage **Unlimited**	Storage **Unlimited**
Updates **1 year**	Updates **1 year**	Updates **Lifetime**
Support **Tickets, forums, docs**	Support **Tickets, forums, docs**	Support **Tickets, forums, docs**

- All licences are one-time purchases, not subscriptions
- After the first year, update extensions cost $36/year (optional — not required to keep using UnRAID)
- All tiers include customer support: tickets, forums, documentation, and one-on-one sessions

Source: unraid.net/pricing

Getting Started

Licensed USB

Received from teacher
HW-bound licence key

Clean Config

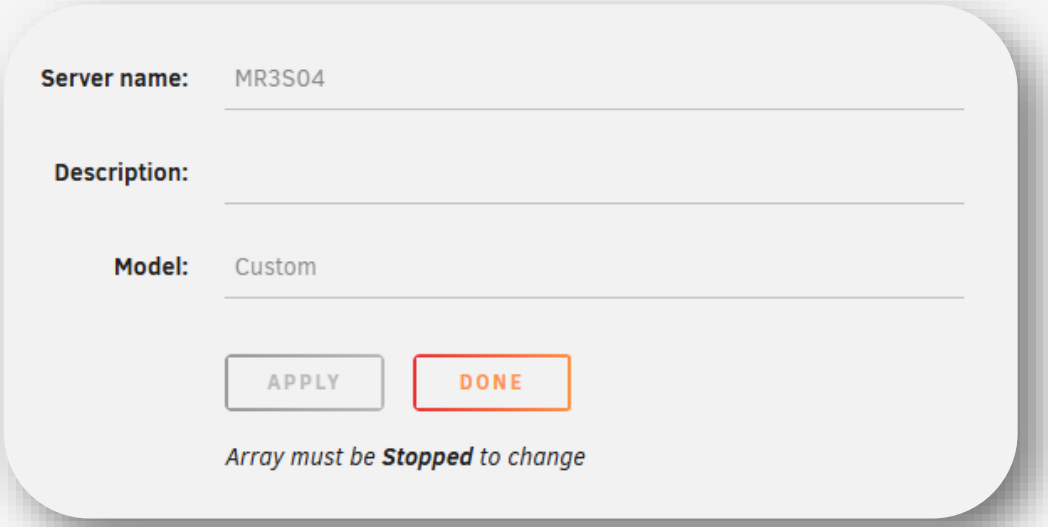
Cleared previous config
Kept licence key file

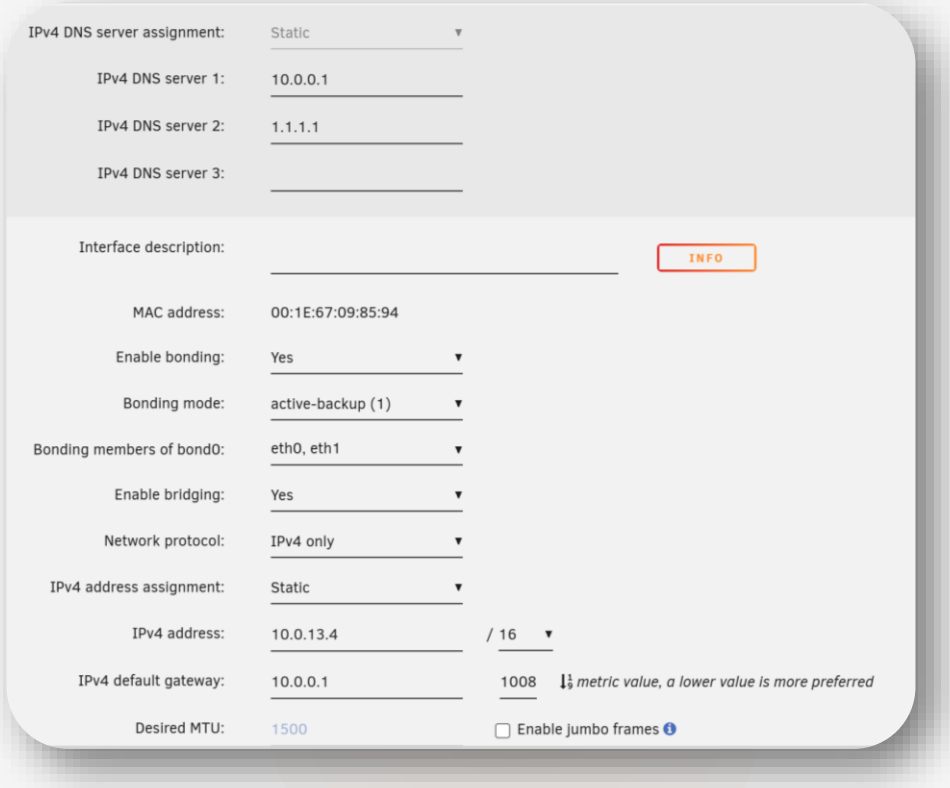
Network Setup

Hostname: MR3S04
IP: 10.0.13.4/16

Updated OS

7.1.2 → 7.2.4
Latest stable release





Gateway: 10.0.0.1

First Problem: The Web UI Broke

PROBLEM

After config reset, web UI unreachable

nginx returned 502
PHP gave blank page

DIAGNOSIS

Management daemon emhttp wasn't starting after boot

FIX

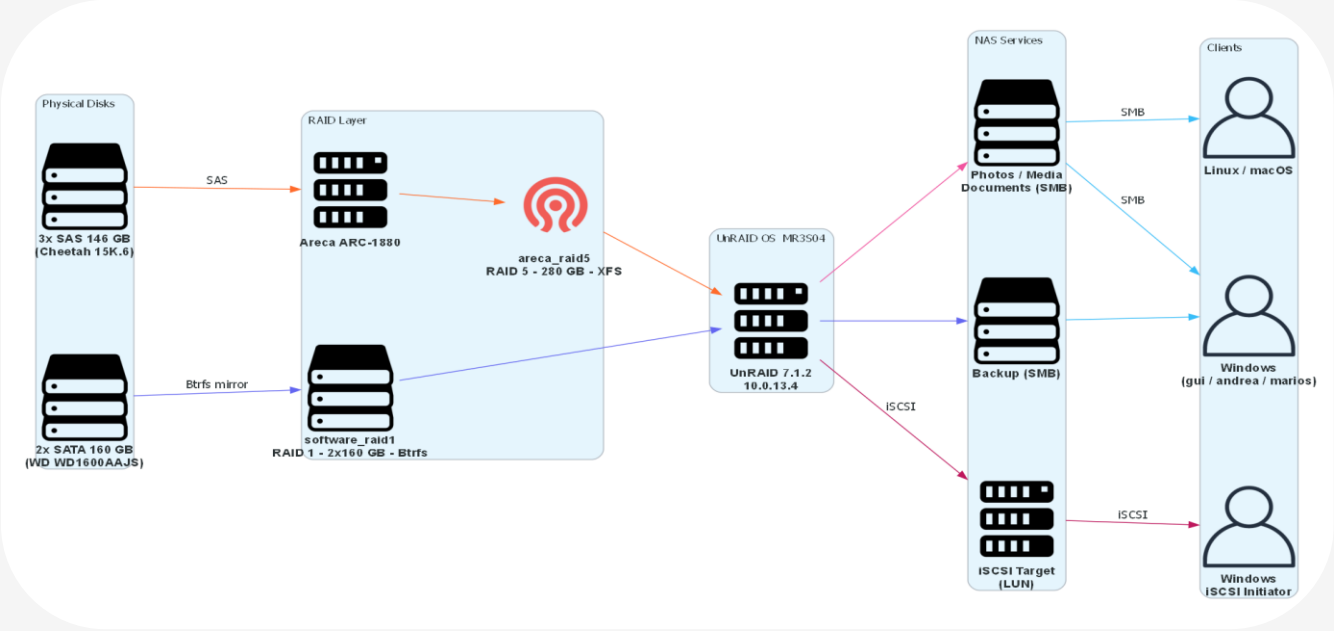
Created /boot/config/go with emhttp startup command

```
/boot/config/go
/usr/local/sbin/emhttp &
```

The go file is a bash script on the USB that UnRAID executes at every boot — the permanent fix.

Even though UnRAID looks like a simple web UI, underneath it's still Linux — and that's where you fix things.

Storage Architecture



HW RAID 5 — areca_raid5

3x SAS disks, 280 GB total
XFS filesystem
Managed by Areca controller
UnRAID sees it as a single disk

SW RAID 1 — software_raid1

2x SATA 160 GB disks
Btrfs filesystem
Managed by UnRAID
Full mirror — best for critical data

Second Problem: RAID 1 Pool Refused to Start

> "Too many wrong and/or missing disks!"

CAUSE

Stale disk assignments from previous team's configuration still in the system

→

FIX

Tools → New Config
Preserve current assignments: All

→

RESULT

Reassigned disks,
formatted Btrfs,
RAID 1 pool mounted clean

Two problems, two fixes — both taught us how UnRAID actually works under the hood.

Shares & Access Control

Folder Repartitions

Share	Storage	Purpose
Photos	areca_raid5	Family photos
Media	areca_raid5	Videos, music
Documents	areca_raid5	General files
Backup	software_raid1	Protected backups

User Permissions

User	Role	Photos/Media/Docs	Backup
gui	Parent	Read/Write	Read/Write
andrea	Parent	Read/Write	Read/Write
marios	Child	Read-only	**No Access**

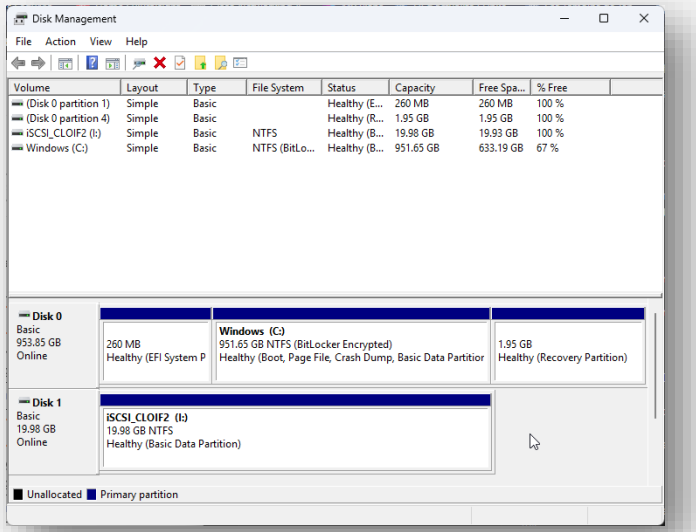
All shares: SMB Private — every connection requires username and password (no guest access)

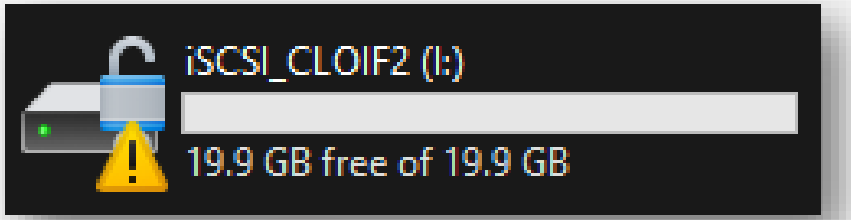
iSCSI: Block Storage via Plugin

iSCSI = the client sees a local disk, not a shared folder — block-level storage over the network

Not built into UnRAID → added via "Unraid iSCSI" plugin (SimonFair)
Created file-based LUN on areca_raid5
Attached to target → authorised Windows initiator







Plugin ecosystem extends UnRAID beyond just file sharing — iSCSI adds enterprise-grade block storage.

Live Demo

- UnRAID dashboard — array status, both storage pools
- Shares and per-user permissions in the UI
- SMB access from Windows (\\MR3S04\Documents)
- Permission denied: marios tries Backup
- iSCSI target + Windows disk (if time allows)

http://10.0.13.4

Conclusion

What UnRAID Does Well

- ✓ Intuitive web UI for all management
- ✓ Rich plugin ecosystem (Community Apps)
- ✓ Flexible storage — mix HW + SW RAID
- ✓ Easy share and permission management
- ✓ Docker + VM support out of the box

Where It Falls Short

- ✗ Commercial licence cost (only paid NAS)
- ✗ iSCSI depends on community plugin
- ✗ No native RAID 5 striping
- ✗ Some features need CLI when things break

Sources

unraid.net — Official site & documentation
SimonFair/unraid-iscsi — iSCSI plugin (GitHub)
Areca ARC-1880 — RAID controller documentation
Intel SR2600UR — Server service guide
Course assignment brief — CLOIF2

Thank You

Questions?

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