Virtualization on FreeBSD

Sylve

Yet another VM & Jail Manager - what makes Sylve so special?

History of Virtualization

FreeBSD's native hypervisor is called bhyve and has an impressive development history.

1

2010 - Initial Development Steps

Work on bhyve began as early as 2010 as an innovative project for FreeBSD

2

FreeBSD 9.x - First Usable Packages

Experimental support became available, but was not yet production-ready

3

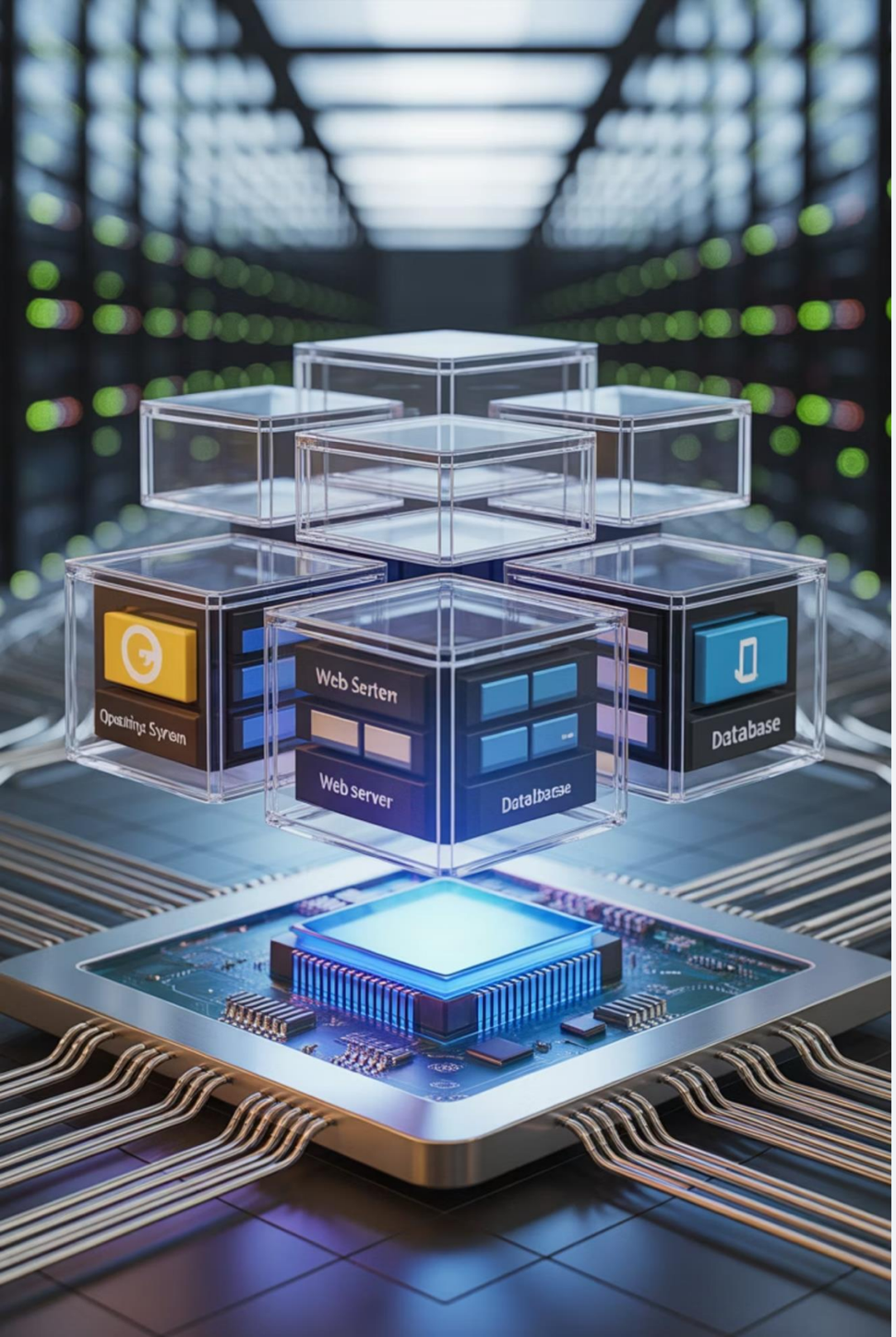
2014 - Official Release

With FreeBSD 10, bhyve was officially introduced, initially only with FreeBSD guests

4

10.1 & 11 - Full Support

Windows and Linux support made bhyve a full-fledged virtualization solution



History of Containerization

In FreeBSD, containerization is called "Jails" - a concept that goes far beyond a simple chroot.

2000 – FreeBSD 4.0

Jails Introduced - More than just chroot, also supports user and network level virtualization

2005 – Linux OpenVZ

Linux Follows - OpenVZ brings container technology to Linux, years after FreeBSD

2008 – LXC Mainline

Mainstream Support - Linux finally receives mainline support for containers

Result: FreeBSD was much earlier in supporting this technology!

Why Choose FreeBSD?

Easy to Use

Intuitive user interface and clear documentation make getting started easy

Follow KISS Principle

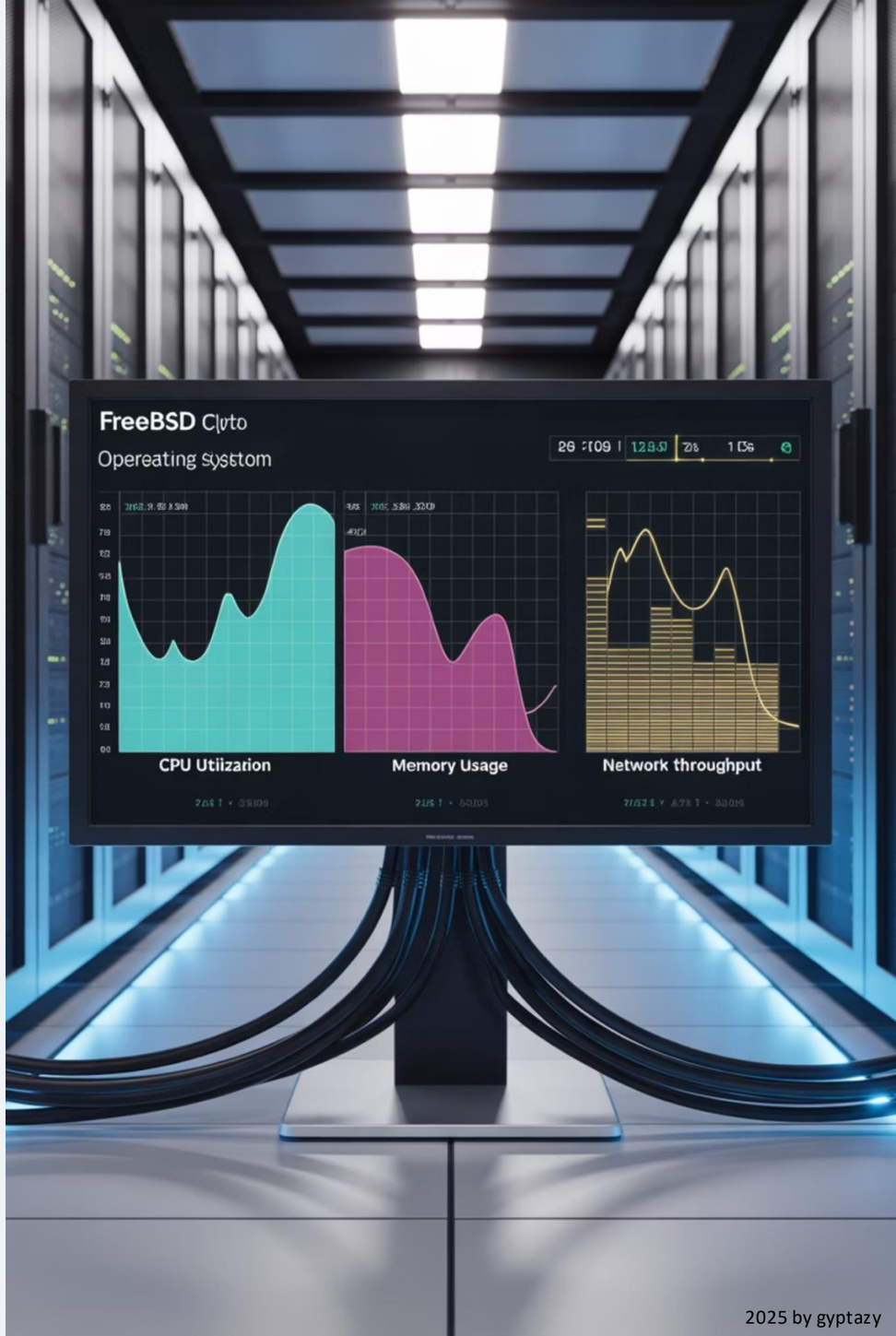
Keep It Simple, Stupid - FreeBSD consistently adheres to the principle of simplicity

Excellent Performance

Optimized kernel architecture ensures exceptional performance

Great Feature Set

By utilizing ZFS and PF, you gain access to cutting-edge filesystem and firewall technology



Development & Community

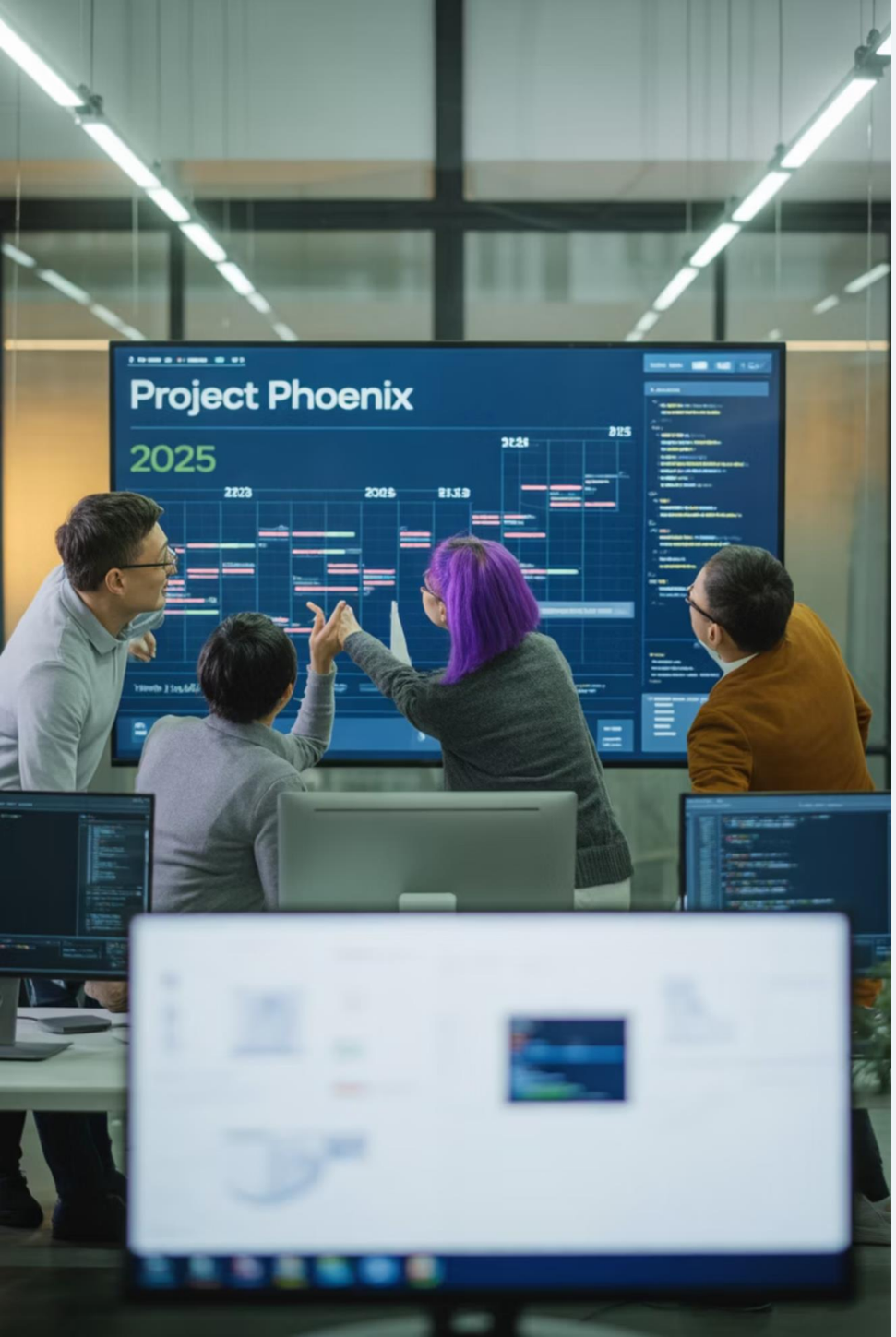
Community-Driven Development

FreeBSD is developed by a passionate community that prioritizes quality over quantity. While business adoption occurs in niche areas, major players like NetApp, Netflix, and Google rely on FreeBSD.

- Too different compared to Linux
- KISS vs. complex requirements
- Influenced by Dexter, Stefano, gyptazy, and many others
- Supported by the FreeBSD Foundation

Community Projects

- BSD Cafe
- BSD Pub
- bhyve Developer/User Weekly



Sylve History

1

Project Start 2025

Sylve was launched as an innovative solution for FreeBSD virtualization

2

Sponsored by

- FreeBSD Foundation
- Alchemilla

3

Lead Developer

Hayzam Sherif leads the project with expertise and vision

4

Technology Stack

Written in **Go, Node, NPM** with SvelteKit & Tailwind for modern UI

Sylve Features

VM/Jail Management

- CPU Pinning Support
- PCI Passthrough Configuration
- Resource Management

Network Management

- Integrated Firewall
- NAT Configuration
- Port Forward Setup

Storage Management

- Local ZFS Support
- iSCSI on the Roadmap
- NFS already manually usable

API & Clustering

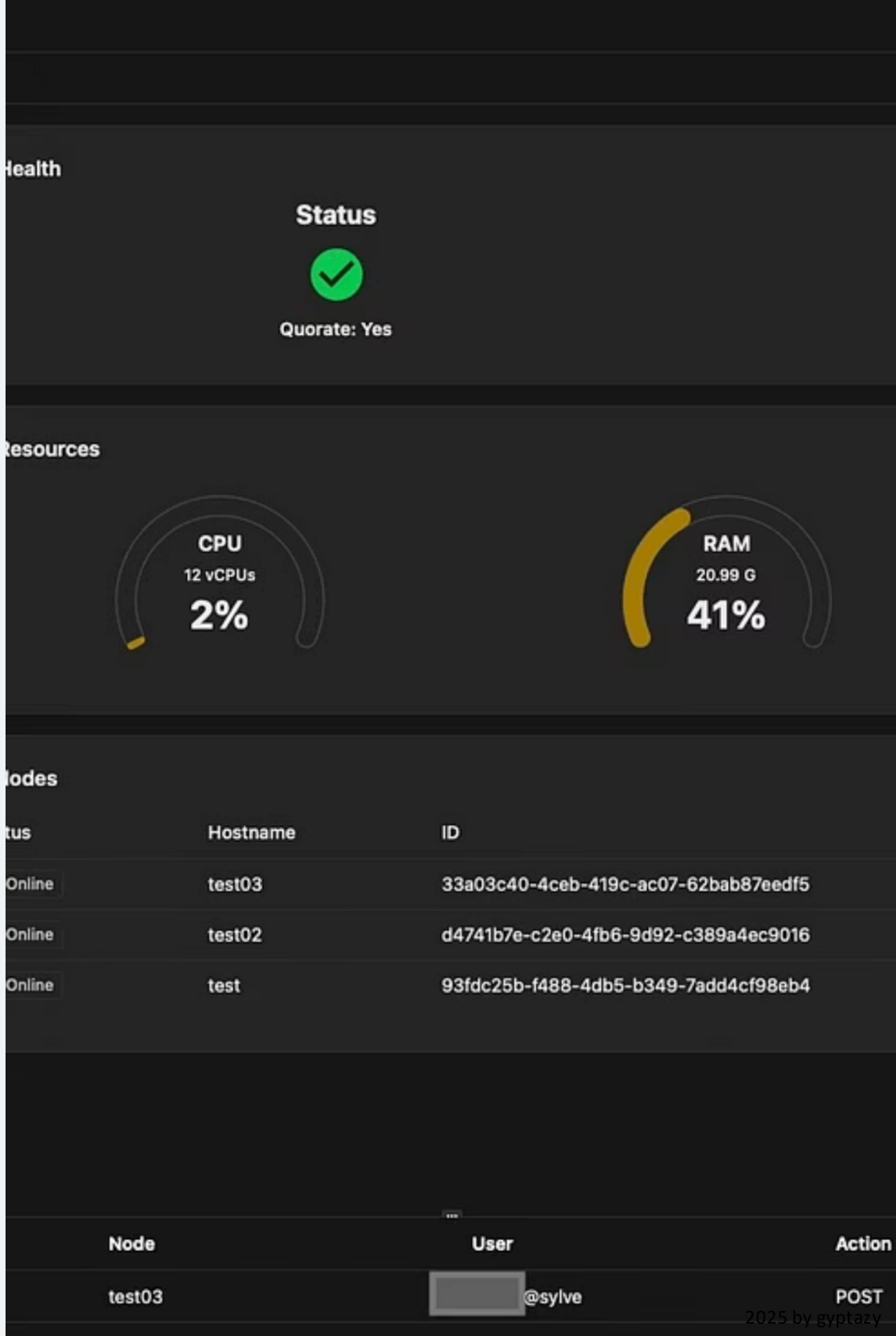
- API-based Approach
- Cluster Management
    - Note: No Live Migrations yet

Goal

> Finally provide a user-friendly approach to managing a clustered virtualization stack on FreeBSD with bhyve and Jails.

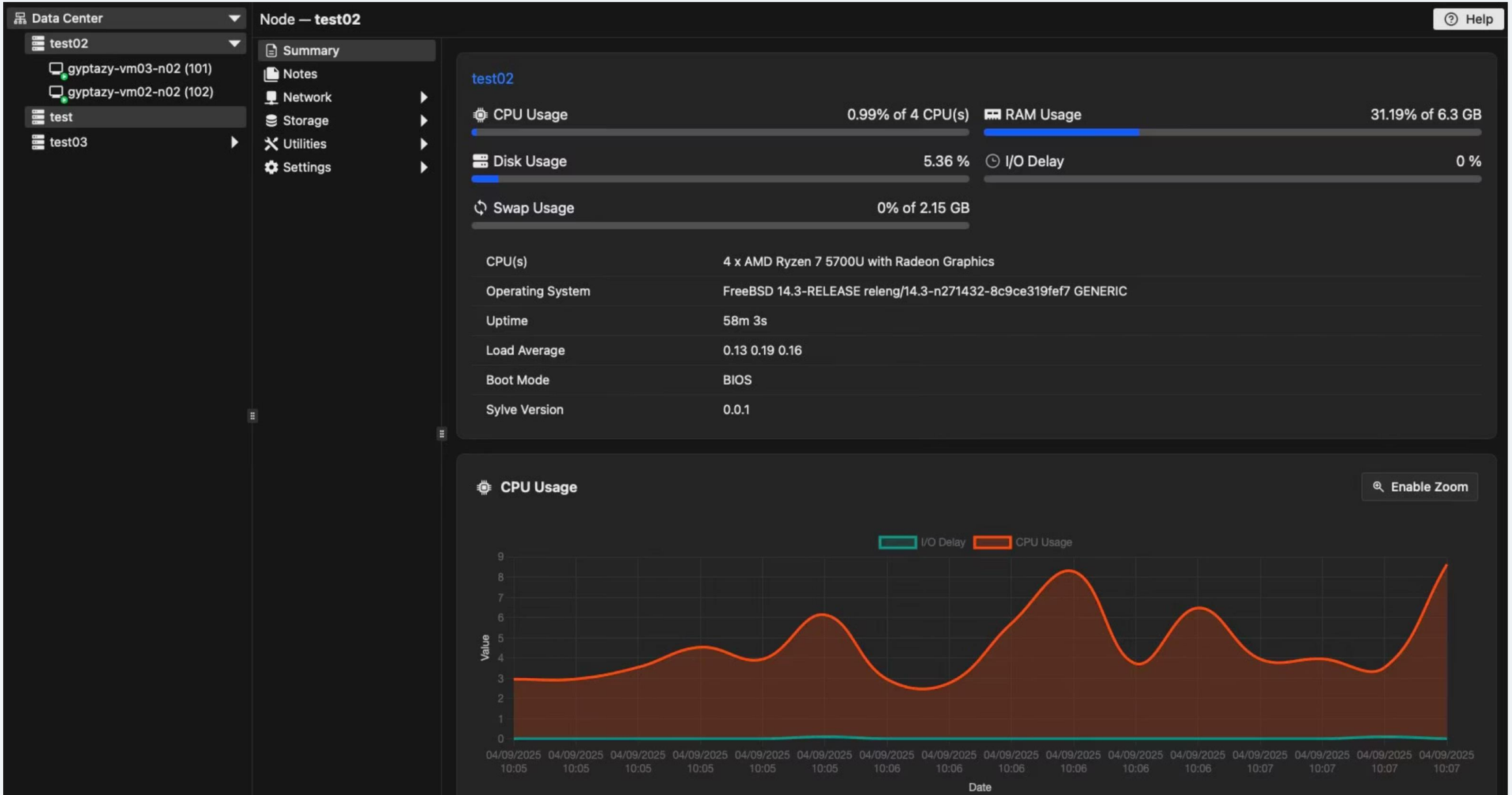
It is the first user-friendly interface that offers clustering support, apart from CLI tools. Sylve closes an important gap in the FreeBSD ecosystem, making advanced virtualization technologies accessible to a broader audience.

> **For CLI enthusiasts:** If you prefer the command line, you should stick with cbsd.



Sylve in Action: Live Demonstration

Let's take a look at using and managing Sylve on FreeBSD. Let's create a three node cluster!



Questions?

Feel free to ask any questions!

Thank You!

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