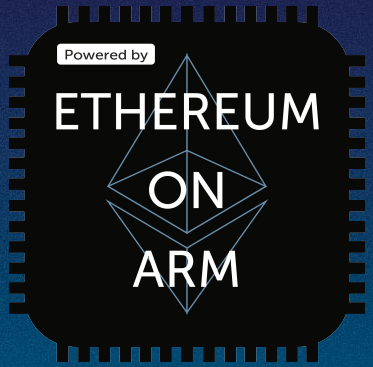

Supernodes on a Shoestring
Democratizing Ethereum with Low-Powered Hardware
Diego Losada, Fernando Collado
Ethereum on Arm

Who we are?

About US



We help users to run Ethereum nodes in low-powered and resource-constrained devices by installing and setting up the OS and the Ethereum stack.

Who we are?

- We’re Ethereum on ARM—a small, dedicated group of blockchain enthusiasts and tech lovers working to make Ethereum accessible on ARM devices. We believe that anyone interested in supporting the network should be able to do so without needing costly equipment or advanced technical knowledge.

- Our work is rooted in the vision of a more inclusive Ethereum network. By making it easier to run nodes on affordable, energy-efficient ARM devices, we hope to open doors for people everywhere to join and strengthen the network.

- Our team brings together experience in blockchain and Linux-based ARM device setup, focusing on simplicity and reliability. We work hard to build tools that are easy to use, so that participating in Ethereum’s decentralized future is accessible to more people.

Why run Ethereum on ARM?

- Low power consumption
- Affordable hardware
- Great for lightweight nodes and testing environments
- Growing support and community resources

What is a supernode?

What is a Supernode?.

- **Layer 1 Consensus Client**: Ensures security by verifying blocks and maintaining the integrity of the Ethereum blockchain.
- **Execution Client**: Executes transactions, smart contracts, and handles storage, running the Ethereum Virtual Machine (EVM) to power decentralized applications.
- **Layer 2 Client**: Supports Ethereum Layer 2 solutions (like Optimism and Arbitrum), enabling faster, more affordable transactions and offloading tasks from the main network.

A supernode is a high-capacity Ethereum node that integrates Layer 1 consensus and execution with Layer 2 support, enabling scalable, efficient, and resilient network participation.

Why Supernodes Matter ?

Supernodes are crucial for Ethereum's scalability and resilience. By operating across both core and scaling layers, they reduce network congestion, lower gas fees, and contribute to a stronger, more decentralized Ethereum network. Supernodes are the backbone for a scalable and efficient future on Ethereum.

A supernode is a high-capacity Ethereum node that integrates Layer 1 consensus and execution with Layer 2 support, enabling scalable, efficient, and resilient network participation.

Supported Hardware

Recomended ARM boards?

- NanoPC T6
- Rock 5B
- Rock 5B+ Blue Edition (32GB)
- Orange Pi 5 Plus
- Orange Pi 5

These boards offer solid performance for Ethereum nodes, especially for full and staking nodes.

Hardware requirements

- Essential Hardware Requirements
  - **RAM:** Minimum 16 GB for optimal node performance
  - **Storage:** NVMe disk with a minimum of 2 TB capacity
- Other Required Components
  - **MicroSD Card:** At least 16 GB (Class 10)
  - **Power Supply:** Board-compatible, reliable PSU
  - **Ethernet Cable:** Ensures stable network connection
  - **Cooling Case with Passive Heatsink**

The more RAM and storage, the smoother the node performance!

Hardware requirements II

- Storage Tips for Reliability
  - **Disk Choice:** Use mid-range to high-end NVMe disks
  - **Why?:** Reliable performance over long periods
  - **Minimum Size:** 2 TB

Quality storage improves node uptime and reduces lag!

- Setting Up Your Network
  - **Port Forwarding:** Required for external access
  - **Stable Ethernet Connection** for consistency

- **Optional:** USB keyboard, monitor, and HDMI cable for direct management

Live demo

Thank you!

Diego Losada, Fernando Collado

info@ethereumonarm.com

@ethereumonarm