

🛡️ Building Your Own Router / Firewall
Raspberry Pi-Based Edge Firewall

😊 Why Build Your Own Router?

- Learn real packet flow 📦

- Full control over routing & firewall logic 🔥

- No vendor lock-in 🗝️

- Ideal for labs, edge services, demos 🌱

🏠 What We're Building

- Dual-homed Linux router

- NAT for internal clients

- Explicit inbound port forwarding

- SSH restricted to internal network

🖨️ Hardware Platform

- Raspberry Pi 3B
- Silent, fanless, low power
- USB Ethernet for second interface

🌐 Physical Network Layout

- Inline gateway
- Trusted and untrusted sides

🏗️ Network Design

- **eth0 (EXTERNAL):** 192.168.1.50

- **eth1 (INTERNAL):** 10.10.10.0/24

🔄 NAT Packet Flow

📶 Port Forwarding Concept

🛡️ SSH Security

- SSH allowed internal only

✅ Wrap-Up

- Linux makes a solid firewall 🐧

- Small hardware, big lessons 📦

- Strong foundation for routing, NAT, and security