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Home Infrastructure Cluster & WireGuard Mesh Networking

Category: Infrastructure, Networking, Data Sovereignty | Date: 2020-Present

Data Sovereignty Through Self-Hosting

Built a comprehensive home infrastructure cluster using repurposed MacMini hardware to maintain complete data sovereignty and avoid cloud dependencies. This project represents a complete shift away from cloud services, with self-hosted email, DNS, and over 100 additional services.

Infrastructure Components

- **Repurposed MacMini Cluster:** Sustainable infrastructure using existing hardware
- **Self-Hosted Email:** Complete email sovereignty and control
- **DNS Infrastructure:** Custom DNS services for complete control
- **100+ Services:** Comprehensive self-hosting ecosystem
- **Data Sovereignty:** Complete control over personal and business data

WireGuard Mesh Networking Innovation

Developed a custom WireGuard mesh networking tool designed to simplify deployment of mesh networks as opposed to traditional hub-and-spoke architectures. This tooling enables ease of deployment for quantum-resistant networking solutions.

Technical Achievements

- **Mesh vs Hub-Spoke:** Alternative to traditional networking architectures
- **Simplified Deployment:** Tooling to make mesh networks easier to implement
- **Quantum-Resistant:** Future-proof networking solutions
- **Infrastructure Innovation:** Advancing networking technology

Impact

This infrastructure represents a complete commitment to data sovereignty, infrastructure innovation, and building future-proof networking solutions. The home cluster provides complete control over personal and business data, while the WireGuard mesh networking tool advances the state of secure, distributed networking.

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Accessibility: This website is designed and developed to meet WCAG 2.1 Level AAA standards, ensuring the highest level of accessibility for all users. Features include high contrast ratios, keyboard navigation, screen reader compatibility, and responsive design. The site supports both light and dark modes with automatic system preference detection.