Super Power Labs  
Infrastructure Plan

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# Project Summary

This document outlines the infrastructure and planning for SuperPower Labs' self-hosted server network. The system spans Hostinger cloud services and a home network, featuring Dockerized applications, native installs, automated backups, monitoring, and secure connectivity via Tailscale.

# Server Specifications

* KVM8: 8 vCPU, 32GB RAM, 400GB NVMe, 32TB bandwidth
* KVM8: 8 vCPU, 32GB RAM, 400GB NVMe, 32TB bandwidth
* KVM2: 2 vCPU, 8GB RAM, 100GB NVMe, 8TB bandwidth
* The Beast (Workstation): Specs TBD

# Infrastructure Overview by Network

## Hostinger Network

* Cloudflare DNS and Hostinger firewall settings per VPS
* KVM8-A: BigBlueButton (native), Docker, Portainer, Tailscale, Cockpit
* KVM8-B: PostgreSQL, Moodle, n8n, NGINX Proxy Manager, Portainer, Docker, Tailscale, Cockpit
* KVM2: Monitoring (Grafana, Prometheus), Dashy/Homer, Docker, Portainer, Cockpit, Tailscale

## Home Network

* AT&T Fiber Gateway (1Gbps up/down)
* Synology NAS: Backup destination (rsync or Active Backup)
* Optional Raspberry Pis for media server, DNS, automation
* The Beast: Local workstation, LAN connected

# Setup Phases

* Phase 1: OS & Security - SSH keys, firewall, Tailscale, Cockpit
* Phase 2: Docker Infrastructure - Docker, Portainer, folder structure
* Phase 3: Reverse Proxy - NGINX Proxy Manager with Cloudflare
* Phase 4: App Deployment - BBB (native), Moodle, PostgreSQL, n8n (Docker)
* Phase 5: AI Stack - LLMs (Ollama, LLaMA) on KVM8-B or KVM2
* Phase 6: Monitoring/Backups - Netdata, Watchtower, rsync to Synology
* Phase 7: Scalability - Portable Docker, `.env` secrets, optional Docker Swarm

# Risk Areas & Planning

* Permission issues (UID/GID mismatches)
* Reverse proxy config and SSL cert delays
* BigBlueButton port conflicts
* Container dependency timing (Postgres before Moodle)
* DNS propagation and SSL failures
* Resource contention (BBB and LLMs need isolation)