

# Description

Welcome to my Home Lab documentation! This book serves as a centralized knowledge base for the design, configuration, and ongoing management of my personal IT infrastructure. It includes detailed notes, guides, troubleshooting steps, and configurations for the various technologies and services I'm running in my lab environment.

The purpose of this home lab is to deepen my understanding of enterprise technologies, experiment with new tools, and simulate real-world IT scenarios. From virtualization and networking to security, automation, and containerization, this space is where I build, break, and learn.

Whether it's setting up a Proxmox cluster, configuring a pfSense firewall, deploying Docker containers, managing endpoints with Tanium, or monitoring systems with tools like Zabbix and Wazuh, everything I do here helps sharpen my skills and stay current with the latest industry trends.

This book documents the architecture, configuration, and ongoing management of my personal home lab — a self-hosted environment that mirrors real-world enterprise infrastructure. It serves both as a technical reference for myself and as a showcase of my skills and experience for recruiters and industry professionals.

My lab is designed for continuous learning and hands-on experience with systems administration, virtualization, networking, endpoint management, security, and automation.

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## ?? Core Platforms & Services

- **Virtualization:** Proxmox VE for efficient VM management and high availability
- **Containerization:** Docker Compose for deploying and orchestrating containerized applications
- **Networking & Security:** pfSense for firewall, routing, and VPN services
- **Identity & Access Management:** Authentik for centralized authentication and single sign-on (SSO)
- **Monitoring & Management:**
  - **Zabbix** for infrastructure monitoring and alerting
  - **Tanium** for real-time endpoint visibility and security
  - **SCCM (System Center Configuration Manager)** for imaging, patching, and software deployment

## ? Windows Infrastructure:

- **Active Directory Domain Services (AD DS)** for centralized authentication
- **DNS, DHCP, and Group Policy** to manage network configuration and user environments

- **WSUS** for Windows Update Services
  - **SCCM (System Center Configuration Manager)** for endpoint management, imaging, and software deployment
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## ? Productivity, Collaboration & Documentation

- **Nextcloud** for self-hosted file sync, sharing, and collaboration
  - **Mattermost** as an internal messaging and communication platform
  - **Mailcow** as a complete mail server suite for email testing and administration
  - **Snipe-IT** for asset and license tracking
  - **Paperless-NGX** for document digitization and automation
  - **BookStack** as a structured internal wiki and knowledge base
  - **Audiobookshelf** for personal media streaming
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This lab reflects my passion for IT, my commitment to self-improvement, and my ability to design, deploy, and manage production-grade infrastructure. It provides a sandbox for testing updates, validating new tools, and simulating enterprise-level scenarios — all while refining best practices in security, automation, and documentation.

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