

AI-04549 Infrastructure Dockerlab

The rise of private markets and capital, the push toward always-on markets, and the integration of AI across every aspect of our industry are the infrastructure of 2026 and beyond, list 22 possible self-hosted docker application projects I can focus on to tangent where the industrialized world is heading.

Navigating the shift toward private capital models, 24/7 financial and operational markets, and pervasive local AI requires an infrastructure that prioritizes **data sovereignty, execution speed, edge intelligence, and low-latency decision engine orchestration.**

Here are **22 production-ready, self-hosted Docker application projects** aligned across these core pillars:

Pillar I: Private Capital, Asset Management & Intelligence ⇔

Managing private equity, real estate, complex deal flows, and localized market signals away from third-party cloud visibility.

1. **Docmost / Paperless-ngx** (Document Intelligence & Data Room)

- **The Tangent:** Private markets rely on unstructured documents (term sheets, LP agreements, private placement memorandums).
- **Docker Execution:** Run OCR pipelines combined with local vector search to transform thousands of PDF deeds, tax returns, and offering documents into an instantly queryable private data room.

2. **NocoDB / Directus** (Private Asset Database & Deal Tracking)

- **The Tangent:** Private market transactions lack standardized public feeds; they rely on proprietary relational databases.
- **Docker Execution:** Turn raw Postgres or MySQL schemas into a structured internal CRM and portfolio asset tracker without SaaS exposure.

3. **Metabase** (Private Market Analytics & LP Reporting)

- **The Tangent:** Institutional investors require custom visualization of private yield, IRR metrics, and asset valuations.
- **Docker Execution:** Connect directly to internal read-replicas to run localized, SQL-backed financial dashboards and automated reporting loops without exporting raw data.

4. **Actual Budget** (Deterministic Capital & Cash Flow Tracking)

- **The Tangent:** High-velocity private operations need zero-latency, local-first zero-based budgeting for physical assets and capital allocation.
- **Docker Execution:** Single-container sync engine allowing encrypted, client-side budget verification and multi-currency ledger tracking.

5. **Ghost / Coolify** (Private Investor Relations & LP Portals)

- **The Tangent:** Capital providers demand direct, secure communication paths rather than untrusted third-party platforms.
- **Docker Execution:** Deploy an isolated, headless content engine behind strict reverse-proxy authentication to push encrypted investor updates and performance write-ups.

Pillar II: Always-On Markets & Real-Time Orchestration

In a global, non-stop market environment, execution loops, service uptime, event monitoring, and API automation must run continuously on private compute.

6. **n8n** (Automated Market & Event Workflow Engine)

- **The Tangent:** Always-on markets require event-driven automation between webhooks, databases, and alerting systems.
- **Docker Execution:** Run complex node-based event pipelines (e.g., ingest price alerts, parse incoming emails, trigger execution scripts) on dedicated containerized instances.

7. **Changedetection.io** (Private Market & Regulatory Scraper)

- **The Tangent:** Real-time edge over non-public information comes from tracking subtle shifts in land registries, SEC/regulatory filings, and price pages.
- **Docker Execution:** Continuous headful/headless site polling containerized with Playwright, delivering instant webhook notifications upon content drift.

8. **Uptime Kuma** (Latency & API Pulse Monitoring)

- **The Tangent:** 24/7 markets do not tolerate unmonitored API endpoints, websocket drops, or gateway outages.
- **Docker Execution:** Ultra-lightweight status monitoring container tracking TCP sockets, HTTP latency, and SSL expirations with immediate multi-channel alerting.

9. **Grafana + Prometheus** (High-Frequency Time-Series Telemetry)

- **The Tangent:** Operational parameters (system health, market data streams, execution delays) must be observed in microsecond/millisecond time windows.
- **Docker Execution:** Modern time-series stack tracking container resource footprints, system queues, and application metric outputs.

10. **Vector / Fluentbit** (Centralized Log Ingestion & Event Audit)

- **The Tangent:** Non-stop infrastructure requires real-time audit trails for compliance and anomaly detection.
- **Docker Execution:** Ingest, parse, and route application container logs into localized storage at tens of thousands of events per second with minimal CPU footprint.

11. **Redpanda / Mosquitto MQTT** (Low-Latency Message Brokerage)

- **The Tangent:** Real-time asset tracking and financial signals require high-throughput streaming pipelines.
- **Docker Execution:** Deploy Kafka-compatible (Redpanda) or lightweight Pub/Sub (MQTT) brokers to pass sub-millisecond payloads across local processing containers.

Pillar III: Embedded AI, Local Models & Private Inference

Bringing artificial intelligence directly onto localized edge nodes to preserve IP, guarantee continuous execution, and process sensitive data off the public cloud.

12. **Ollama** (Private LLM Runtime Engine)

- **The Tangent:** Using public LLMs exposes trade secrets and proprietary data; localized execution is mandatory for high-stakes intelligence.
- **Docker Execution:** Containerize GPU-accelerated inference for open models (Llama 3, Mistral, Qwen) running entirely on local host hardware.

13. **Open WebUI** (Local AI Interface & Task Center)

- **The Tangent:** Teams need a seamless multi-model chat interface integrated with local document intelligence.
- **Docker Execution:** Deploy a full-featured UI connected to Ollama and local vector databases featuring RAG (Retrieval-Augmented Generation), role permissions, and web search integration.

14. **AnythingLLM** (Local Enterprise RAG System)

- **The Tangent:** Injecting private documents, financial models, and codebases into an AI model safely requires an end-to-end local embedding stack.
- **Docker Execution:** Run document parsing, vector database storage (Chroma/LanceDB), and LLM generation within a single isolated Docker compose network.

15. Qdrant / Milvus (Vector Search Engine for Embeddings)

- **The Tangent:** AI-driven search across market data, financial news, and semantic entities requires high-dimensional vector databases.
- **Docker Execution:** Deploy a dedicated vector database container to store and query millions of document embeddings with sub-10ms response times.

16. Flowise / Langflow (Visual AI Agent Builder)

- **The Tangent:** Industrial AI applications are shifting from simple prompt interfaces to multi-step autonomous agentic workflows.
- **Docker Execution:** Drag-and-drop canvas for chaining local LLMs, vector DBs, and execution scripts into functional API endpoints.

17. LocalAI / vLLM (OpenAI-Compatible Local API Gateway)

- **The Tangent:** Legacy software platforms expecting OpenAI API signatures can be retrofitted to use zero-cost, private local inference.
- **Docker Execution:** Self-hosted drop-in replacement API server translating standard OpenAIREST calls directly to local GPU acceleration.

Pillar IV: Resilient Core Infrastructure & Edge Compute

The base layer that ensures all your private, always-on, and AI workloads stay isolated, accessible, and operational.

18. Traefik / Nginx Proxy Manager (Edge Routing & Automatic TLS)

- **The Tangent:** Multi-service homelab architectures need dynamic routing, SSL termination, and zero-trust perimeter control.
- **Docker Execution:** Automatically discover container endpoints, issue SSL certificates, and expose secure internal routes with zero downtime.

19. Portainer / Dockge (Container Fleet Orchestration)

- **The Tangent:** Managing modern decentralized infrastructure requires operational visibility over multi-container stacks.
- **Docker Execution:** Centralized management dashboard for deploying, updating, and monitoring multi-container Compose applications across local host nodes.

20. MinIO (Private S3-Compatible Object Storage)

- **The Tangent:** Unstructured data (AI model weights, raw logs, financial archives) requires scalable, local object storage.
- **Docker Execution:** High-performance, S3-native object storage engine for local backups, dataset hosting, and document storage.

21. Vaultwarden (Zero-Knowledge Secrets & API Management)

- **The Tangent:** Always-on automated workflows require centralized, securely encrypted storage for API keys, private keys, and database credentials.

- **Docker Execution:** Lightweight Rust implementation of the Bitwarden server protocol running in a minimal container footprint.
2. **Forgejo / Gitea** (Private Source Control & Continuous Integration)
- **The Tangent:** Complete ownership of proprietary algorithmic strategies, AI pipelines, and operational codebases demands on-premise version control.
 - **Docker Execution:** Self-contained Git service and CI/CD runner capable of automating container builds directly on private hardware.

Quick Architecture Stack Matrix

Layer	Primary Docker Apps	Role in the 2026 Shift
Intelligence	Ollama + Open WebUI + Qdrant	Private local AI inference without data leakage.
Automation	n8n + Changedetection.io	Always-on market monitoring and execution loops.
Data Room	Docmost + NocoDB + Metabase	Sovereign asset tracking, document search, and reporting.
Control	Traefik + Dockge + Vaultwarden	Secure perimeter gateway, stack management, and secret security.

Anything related to warehouse, farming and service industries

The industrialization of physical spaces—warehouses, farms, and service/hospitality environments—is centered around **edge telemetry, localized computer vision, automated asset state tracking, and zero-latency operational control**. Here are self-hosted Docker projects specifically tailored to bridge self-hosted compute with physical physical operations, logistics, agriculture, and field service management:



Autonomous warehouse robotics & telemetry. Source: Logiwa | WMS / Warehouse Robotics and WMS Software: Everything You Need to Know ...



Controlled-environment precision agriculture. Source: FarmBox Foods / Vertical Hydroponic Farm Company | FarmBox Foods

Warehouse, Logistics & Asset Tracking

Physical inventory management, automated SKU tracking, local barcode scanning, and supply chain telemetry.

1. InvenTree

- **The Tangent:** High-accuracy, real-time parts and inventory management with deep BOM (Bill of Materials) tracking and stock location hierarchies.
- **Docker Execution:** Deploys a Django/PostgreSQL stack to manage multi-location physical inventory, track serial numbers, print dynamic labels, and log asset movements via mobile web hooks or local barcode scanners.

2. Barcode Bakery / ZBar / ZXing API

- **The Tangent:** Offline, high-speed automated image-to-barcode decoding for conveyor belts and receiving bays.
- **Docker Execution:** Run an isolated microservice container that receives visual streams or photo snapshots from IP cameras, decodes UPC/EAN/QR codes in milliseconds, and pushes structured JSON to your inventory database.

3. Traccar

- **The Tangent:** Real-time telematics and GPS fleet/asset monitoring for delivery trucks, forklifts, and yard tractors.
- **Docker Execution:** A unified Java server container that ingests telemetry from thousands of hardware GPS protocols, storing routes, geofences, speed alerts, and engine diagnostics locally.

4. Grocy

- **The Tangent:** Micro-warehouse and perishable asset tracking with batch-level expiry monitoring and automated replenishment triggers.

- **Docker Execution:** Lightweight PHP container acting as an edge asset engine, mapping physical stock levels directly to automated purchase orders via internal webhooks.

Smart Agriculture & Precision Farming

Environmental telemetry, hydroponic/irrigation automation, crop vision, and micro-climate control.

5. Home Assistant / ESPHome (Agri-Edge Instance)

- **The Tangent:** Industrial IoT control for greenhouse HVAC, Automated Fertigation (fertilizer/irrigation), soil moisture monitoring, and lighting cycles.
- **Docker Execution:** Run Home Assistant containerized alongside local MQTT brokers to ingest sensor data from microcontrollers (ESP32/Raspberry Pi) across crop beds, maintaining offline operational logic even during internet blackouts.

6. Frigate NVR (Computer Vision for Agriculture & Livestock)

- **The Tangent:** Real-time visual monitoring for livestock movement, predator detection, crop canopy changes, or perimeter security.
- **Docker Execution:** Uses local Coral TPU or GPU acceleration inside Docker to run real-time object detection models over RTSP camera streams without transmitting video feeds to the cloud.

7. FarmOS

- **The Tangent:** Comprehensive farm management, mapping, and record-keeping platform designed for agricultural production and land stewardship.
- **Docker Execution:** A Drupal-based stack that lets you digitally map fields, track crop rotations, record soil tests, log equipment maintenance, and maintain regulatory compliance records.

8. Node-RED (Modbus / Industrial IoT Automation Engine)

- **The Tangent:** Protocol bridging between legacy agricultural PLCs (Modbus, BACnet, OPC UA) and modern data networks.
- **Docker Execution:** Flow-based execution environment that reads raw analog sensors (soil EC, pH, tank levels) and drives relay boards for pumps, valves, and ventilation fans.

Service, Field Operations & Hospitality

Field dispatch, ticket resolution, ticketing infrastructure, and on-site client service orchestration.

9. Zammad / OpenProject

- **The Tangent:** Omnichannel service request tracking, technician dispatch, and field service management.
- **Docker Execution:** Enterprise-grade ticketing and task engine deployed locally to manage preventive maintenance schedules, field service dispatches, and client SLA tracking with granular auditing.

10. OpenEMR / Medplum

- **The Tangent:** Sovereign healthcare and mobile service clinic record management requiring strict local data retention.
- **Docker Execution:** Full Electronic Health Record (EHR) and practice management stack running on an encrypted Docker network for field clinics or specialized service operations.

11. Invoice Ninja / Kill Bill

- **The Tangent:** Real-time field invoicing, recurring service billing, and automated payment gateway routing.
- **Docker Execution:** Microservice architecture running self-hosted billing engines that generate localized invoices, track work-order completion, and sync directly with internal accounting ledgers.

 Industrial Technical Stack Summary

Sector	Core Docker Applications	Primary Technical Objective
Warehouse & Logistics	InvenTree + Traccar + ZBar API	Real-time asset tracking, automated vision, and fleet telemetry.
Precision Agriculture	FarmOS + Home Assistant + Frigate	Localized crop telemetry, computer vision monitoring, and offline actuators.
Field & Service	Zammad + OpenProject + Invoice Ninja	Dispatch orchestration, local audit trails, and work-order management.