ChatGPT

Latest Holochain Projects and Configurations (Sept 2025 – Jan 2026)

Holochain Framework – Recent Updates (2025)

Holochain is an open-source, agent-centric framework for building peer-to-peer applications. As of late 2025, the core framework entered **beta** with improved stability and is considered ready for limited production use [1]. The **Holochain 0.5** series was released in 2025, focusing on reliability and polish rather than new features [2]. A major networking upgrade ("Kitsune2") drastically improved peer-to-peer **DHT synchronization** speed from ~30 minutes to about 1 minute in most cases [3], making data propagation predictable and robust. Additionally, a new **"immune system" validation** was introduced: nodes now issue **warrants** to block bad actors at the network level when data fails validation [4]. By Q4 2025, Holochain's upcoming **0.6.0** release candidate was integrated into key projects, bringing significant performance, security, and reliability enhancements [5]. Notably, Holochain 0.6 allows running multiple conductor instances concurrently, so different app versions (e.g. 0.5 and 0.6 hApps) can run side-by-side on the same node [6] – an advanced capability that eases transitions between versions. Overall, 2025's development prioritized **stability and performance**: networking works reliably, validation is consistent, and bugs were fixed to meet real-world demands [2]. The Holochain team also improved tooling (see below) and documentation, releasing a comprehensive **Build Guide** and live **Roadmap** to support developers [7] [8]. With this solid foundation, Holochain enters 2026 more mature than ever, poised for broader adoption [9].

Development Environment and Tools (NixOS, Holonix, etc.)

Holochain's developer experience revolves around **Holonix**, a Nix-based dev environment that ensures consistent tooling across systems [10]. Holonix provides all required commands and build dependencies for a given Holochain release, overlaying them on your shell. This means developers on NixOS (or any Linux/macOS with Nix) can easily enter a shell with the exact Holochain version and compiler environment needed. The project uses Nix **flakes** for reproducibility – for example, running `nix develop "github:holochain/holonix?ref=main-0.6"` will drop you into a dev shell with Holochain 0.6.0 and all tools ready to go [11] [12]. (Other flake refs like `main-0.5` let you target the 0.5.x branch for everyday development.) This approach is ideal for advanced setups or custom configurations, and it can be integrated with various shells (e.g. Nushell) or editors.

Beyond the core binaries, Holochain offers a suite of developer tools and libraries: the `hc` CLI ("Holochain Swiss-army knife") helps scaffold, build, and run hApp bundles for testing [13]. There's also **DevHub**, a Holochain-based package repository and GUI for distributing apps and modules [14]. For testing, developers use **Tryorama** (a JavaScript end-to-end testing framework) and **Sweettest** (a Rust integration test library) to simulate multi-agent scenarios [15]. A **Playground** web tool is available to visualize and debug networks of agents [16]. To jump-start new projects, the **hc-scaffold** tool can generate boilerplate for a Holochain app backend [17]. These tools, combined with improved documentation, significantly lower the barrier to building complex peer-to-peer applications on Holochain. Many **modular libraries** exist as well – for example, the Holochain Open Dev collection provides ready-made "building blocks" (user profile modules,

file storage, time/keyword indexers, etc.) that can be dropped into applications [18]. Higher-level frameworks like **hREA** (for mutual-credit and resource accounting using the ValueFlows ontology) enable advanced use-cases such as economic networks [19]. In summary, the ecosystem now boasts a rich set of **plugins, packages, and libraries** to accelerate development, reflecting a maturing platform.

Cross-Platform Deployment and Hardware Support

A key strength of Holochain is its flexibility across different environments. For end-users, the project provides the **Holochain Launcher**, a user-friendly desktop application that runs Holochain hApps on Windows, macOS, and Linux PCs [20]. The Launcher includes an app store interface, so users can install and run distributed apps locally with a few clicks [21]. This makes Holochain apps accessible on common personal computers without manual setup.

For always-on services and self-hosting, the **Holochain community introduced Holochain Edge Node and HolOS in 2025.** The **Edge Node** is an open-source, OCI-compliant **container image** that packages the Holochain conductor for deployment on servers and devices [22]. In essence, it allows you to turn any compatible hardware – from official HoloPort devices to your own PC or a cloud VM – into an "always-on" peer node for Holochain apps [22]. This was a **major milestone in 2025**, as it enables resilient, self-owned hosting of hApps outside of centralized cloud services. The **HolOS** (Holo Operating System) is a lightweight Linux-based OS tailored for running Holochain nodes. In late 2025, **HolOS v0.0.7** launched with a vastly simplified installer and broader hardware compatibility [23]. Users can flash a HolOS ISO to a USB and install it on a HoloPort *or standard x86 machine* in under a minute [23] – dramatically lowering the technical bar for setting up a dedicated Holochain server. HolOS updates are now streamlined (no more full re-flash after v0.0.7) and networking issues (like DHCP timeouts) were fixed for reliability [24]. This means enthusiasts can repurpose old PCs or mini-computers as permanent Holochain nodes with minimal effort.

Importantly, the Edge Node container and HolOS were updated to run on the **latest Holochain 0.6.0 core** by Q4 2025 [25]. They even support running multiple container instances on one host, so one machine can host different hApps or versions in parallel (e.g. one container for a 0.5 app, another for a 0.6 app) [6]. The container also added support for **".webhapp" packages** – files bundling a web UI with the back-end DNA – making app installation as simple as dropping in a single file [6]. All these advances target a **DevOps-friendly, multi-platform** deployment model: from laptops to data-center servers, and even Kubernetes clusters, Holochain apps can run wherever needed.

Mobile and embedded support is also evolving. While Holochain doesn't yet have an official mobile SDK, 2025 saw progress in running Holochain on mobile-oriented platforms. For example, the **Volla Phone** project is working on privacy-centric mobile computing with Holochain [26]. In general, because Holochain apps run as local processes (with networking p2p libraries), they *can* be compiled for ARM and run on mobile Linux/Android environments. In fact, the Holochain team hinted that peer-to-peer hApps can run **natively in mobile OS environments**, giving users full control of their data on their personal devices [27]. This agent-centric approach – apps running directly on user hardware (PCs, phones, etc.) rather than on cloud servers – aligns with Holochain's ethos of digital agency. Even if mobile support is in early stages, the cross-hardware trajectory is clear: Holochain's lightweight architecture (no global blockchain ledger) makes it feasible to deploy on laptops, smartphones, or even IoT-grade devices, as long as they can run Rust binaries.

Notable Holochain Projects and Use Cases (Late 2025)

The Holochain ecosystem has grown to include a variety of projects, with **Holochain-based solutions and even network forks focusing on real-world applications.** Below are some of the latest and most popular initiatives (favoring mature and active projects over purely experimental ones):

- **Holo Hosting Network (Holo & Allograph):** *Holo* is the distributed hosting network that serves Holochain apps to mainstream web users. In 2025, Holo made big strides by launching the **Allograph** network (next-gen Holo architecture) and the Edge Node/HolOS stack discussed above. This allows hosting of Holochain apps on a **P2P cloud** of community-run nodes. Holo's "Edge Nodes" turning home hardware into cloud nodes was a leap toward decentralizing infrastructure [22]. Alongside this, Holo's **Unyt** application introduced automated billing for hosting: in 2025 they demonstrated hApp-level **microbilling** where hosts can be paid for uptime and resource usage [28]. This economic layer is critical for sustaining a decentralized hosting ecosystem. By year's end, Holoports (the dedicated host devices) were being migrated to the Allograph network, enabling them to host not just Holochain hApps but also static websites and non-Holochain workloads in the future [29] [30]. In short, the **Holo-Host** initiative (with ~121 repositories on GitHub) is a major Holochain derivative project, delivering the **"web hosting" use-case** via Holochain tech.

- **Moss & Weave (Agent-Centric Groupware): Moss** is a cutting-edge Holochain application framework (developed by Lightningrod Labs) that was highlighted in 2025 for enabling **sovereign group communication**. Moss (formerly called "We") is essentially a **modular groupware app**: it provides a core group management DNA and lets you plug in various "Tools" (chat, file sharing, task boards, etc.) as additional DNAs, each forming its own private network [31]. Together, Moss + its Tool apps create a cohesive collaboration space for a community, entirely P2P and self-hosted. This became very popular for those seeking **data sovereignty** and privacy. Paired with always-on Edge Nodes, Moss lets families, teams or clubs spin up their own encrypted Slack/Discord-like spaces free from centralized servers [32] [33]. An October 2025 Holo blog dubbed it an "open-source toolkit for creating your own private, resilient P2P digital environments" using **Holochain + Moss + Edge Nodes** [33]. Real-world use cases include private investment groups, off-grid project teams, maker communities, and startup circles – all using Moss to communicate and share data without relying on Big Tech platforms [34] [35]. Moss is relatively advanced (the code is on GitHub and has cross-platform builds for Linux, Mac, Windows) and is a **showcase hApp** for Holochain's **agent-centric social networking** capability.

- **Value Accounting and hREA:** Holochain is also powering next-generation **economic networks**. One flagship effort is **hREA**, an open-source library/toolkit that implements the **ValueFlows** protocol on Holochain for mutual credit, resource planning, and supply chain coordination [19]. In 2025, **Sensorica** (a well-known open value network) continued developing on Holochain, leveraging hREA to manage contributions and rewards in collaborative projects [36]. This allows communities or DAOs to coordinate resources without a centralized server or blockchain fees. Related projects include **Unyt** (mentioned above, for accounting and billing of hosting services) and **Coalesce (Coasys)**, which is working on semantic data interoperability (projects ADAM and Flux) on Holochain [37]. The **Arkology Studio** initiative is building a "Data Commons Stack" for collective sensemaking, highlighting Holochain's use in knowledge sharing networks [38]. We also saw experiments in **digital art and NFTs** on Holochain (e.g. **DADA.art** exploring art/value exchange, and a prototype for **NFTs**

on Holochain demonstrating more energy-efficient NFTs [39]). These are mostly in prototype or pilot stage, but they showcase the breadth of the ecosystem beyond infrastructure.

- **Energy and Distributed IoT:** *Energy systems* are an emerging secondary focus. Holochain's lightweight, offline-friendly nature makes it suitable for **distributed smart grids and IoT coordination**. For example, the **Internet of Energy Network (IOEN)** project has been using Holochain as part of a protocol for coordinating energy devices (solar panels, batteries, etc.) at the grid edge [40]. Earlier pilots like **RedGrid** in Australia explored P2P energy marketplaces on Holochain, allowing homes to trade power directly [41]. The vision is an "**Internet of Energy**" where devices can transact energy and balance the grid via micro-transactions, all without a central server. Holochain's advantages for this use-case include its very low overhead (can run on small devices), ability to work offline and sync later (useful in remote areas or microgrids), and local validation (ensuring data like energy generation and consumption is verified at the source) [42] [43]. While many energy projects are still prototypes, they are kept relatively **stable** (avoiding bleeding-edge code) to interface with real hardware. The **focus is on proven frameworks**: using Holochain's stable 0.5/0.6 core to guarantee data integrity for IoT sensors, and leveraging its peer-to-peer nature to enable resilient energy sharing networks. This remains a promising area where Holochain could complement or even outperform traditional blockchain (due to zero fees and offline tolerance) [43].

In summary, **Holochain and its ecosystem** have made significant strides in late 2025. The core framework reached a new level of reliability (with Holochain 0.5.x and 0.6.0 RC), and a host of supporting tools (Nix-based Holonix, launchers, testing frameworks) are in place to support developers. Several **high-profile projects** – from Holo's distributed hosting and Moss groupware to mutual-credit economies and energy grids – are either in production or late-stage prototype, demonstrating Holochain's versatility. These projects emphasize **stable, scalable configurations** (favoring proven libraries and patterns over experimental code) to deliver on Holochain's promise of agent-centric computing. With cross-platform deployment now spanning desktop, server, and mobile environments, Holochain is well-positioned as a foundation for **distributed DevOps, robotics swarms, and IoT networks** in 2026 and beyond. Its agent-oriented, **"living systems"** architecture is attracting interest for applications like **agentic robotics**, where many independent agents (devices or AI processes) need to collaborate without a central point of failure. All of this is being built on the base of **NixOS/Nix-managed environments** (ensuring reproducibility) and a modern toolchain – aligning well with advanced DevOps workflows and the "infrastructure-as-code" vibe. The **bottom line**: Holochain's latest configurations provide a robust, plug-and-play platform for peer-to-peer apps, and a number of stable, community-vetted projects (and forks like Holo's infrastructure) are leading the way in showing how to leverage it in production [33] [28].

Sources: Holochain official documentation and blog; Holo (Holo-Host) project updates and GitHub; Holochain developer portal; and community case studies, Sept 2025–Jan 2026 [1] [5] [10] [33] [42] [28].

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