

■ What is Swarm? tl;dr

— FULLSTACK DECENTRALISED

Swarm is a **decentralised storage and communication network** run by peer-to-peer **Bee nodes**. Upload data, get back a **content hash** — a permanent address derived from the bytes themselves. Anyone with the hash can retrieve the content from any Bee node or public gateway.

Storage is bought as **postage stamps**: prepaid batches purchased with **xBZZ** on Gnosis Chain. Batches have a TTL and expire unless topped up. If every batch covering a chunk expires, that content can be pruned.

Start Building



Developer Intro

/docs/develop/introduction

Docs



Documentation

docs.ethswarm.org

Upload Now



Beeport — no install

beepoint.ethswarm.org

■ What you can build on Swarm

— BUILD WITH FREEDOM · NO SERVERS, NO GATEKEEPERS

File & media storage

Fixed, content-addressed URLs for any file — images, video, PDFs, datasets, ML artifacts, NFT assets.

Live video & streaming

Early proof-of-concept work on HLS over Swarm exists — expect to integrate and tune it yourself.

Decentralised websites

Publish a static front-end straight to the network. No server, no CDN, no DNS lock-in.

Chat, comments & messaging

Real-time chat, threaded comments and peer messaging. Real-time delivery needs a GSOC subscription (see back).

Blogs & dashboards

Stable URLs whose contents update via feeds. Personal blogs, public dashboards, status pages.

dApp front-ends

Host a static front-end for an Ethereum dApp on Swarm. On-chain contracts with content-addressed UI for a fully decentralised stack.

■ What Swarm is *not*

- **Not a database.** Opaque blobs addressed by hash — no queries, no indexing, no search. Model structure in the app layer.
- **Not permanent without payment.** Content lives only while a valid postage stamp covers its chunks.
- **Not instantly consistent.** Uploads propagate asynchronously. `deferred:true` (default) returns once data is pushed; `deferred:false` waits for read-back.
- **Not free to write.** Every upload needs a funded light node and a stamp paid in xBZZ. Reads have a small free tier on gateways.
- **Not a smart-contract platform.** It stores data, it does not execute code. Complements Ethereum, does not replace it.

■ Limitations & gotchas

- **Stamp batch expiry.** Past expiry, chunks become eligible for pruning — not deleted instantly, but can vanish. Monitor and top up.
- **Dynamic pricing.** Stamp cost tracks a price that can rise — top up so batches outlast your needs.
- **Feed writes are append-only.** Each index slot writes once; always resolve the current index before writing.
- **Feed slots hold ≤ 4 KB.** For larger payloads, upload as a file first, then write the reference into the feed.
- **The public gateway blocks unreviewed sites.** A fresh upload can show "Forbidden" — view it at `bzz.limo/bzz/<hash>/` or via your own node.
- **Capacity & lifetime are non-deterministic.** Both depend on chunking and dynamic pricing — monitor and top up.

START BUILDING ON SWARM

THREE WAYS IN · PICK YOUR PATH

NO INSTALL · IN THE BROWSER

Upload via Beeport

Buy a stamp with any token and upload files or a whole site through Beeport's hosted gateway nodes — nothing to run, no node of your own.

beepoint.ethswarm.org

Good for a first upload & quick demos; run a node when you want your own infrastructure.

YOUR OWN NODE · LINUX / MACOS / WSL

Run a Bee light node

```
$ curl -s https://raw.githubusercontent.com/ethersphere/bee/master/install.sh | TAG=v2.8.1 bash
```

```
$ npm i -g @ethersphere/swarm-cli # Node ≥ 18
```

Fund the node ↓ then buy a stamp — full steps: `/bee/installation/quick-start`

No funds? **Bee Factory** runs a local dev cluster with free stamps (Docker): `/.../bee-dev-mode`

OPTIONAL · AI-ASSISTED

Guided setup with Claude Code

```
$ curl -fsSL https://claude.ai/install.sh | bash
```

```
$ git clone https://github.com/ethersphere/swarm-quickstart-skills.git
$ cd swarm-quickstart-skills && claude
```

Type `/swarm` — guided node setup, stamps, upload, hosting. Stuck? `/swarm-troubleshoot`. Windows: `code.claude.com/docs`



Fund your node → fund.ethswarm.org

A node without funds won't run. Top it up on Gnosis from any EVM chain, any token — one transaction.



Deploy a website → justdeploy.bzz.link

Guided deploy walkthrough — Browser · Desktop app · CLI. Mirror: justdeploy.eth.limo

► More on the back: developer URLs, examples, network tools, community ►

Where to go next scan by category · all links stay updated online



SWARM DEVELOPER RESOURCES

docs.ethswarm.org/docs/develop/resources

One curated landing page linking every category below. Bookmark it — links stay updated online, so this printed sheet keeps working.

EXAMPLES

Publishing & Websites

static sites, blogs, file uploads

- **App starter** `npm init swarm-app · create-swarm-app`
- **Simple Blog** `examples/.../simple-blog`
- **Basic Static Website** `examples/.../website`



SCAN QR → MORE PUBLISHING EXAMPLES

Streaming

early HLS-over-Swarm work

- **Stream React example** `Solar-Punk-Ltd`
- **Stream JS library** `swarm-stream-js`
- **Reference: feeds** `/develop/dynamic-content`



SCAN QR → STREAMING REPO

Messaging & Chat

PSS & GSOC patterns

- **Chat React example** `Solar-Punk-Ltd`
- **Chat JS** `swarm-chat-js`
- **PSS messaging** `/.../tools-and-features/pss`
- **GSOC messaging** `/.../tools-and-features/gsoc`



SCAN QR → CHAT REPO

TOOLS

SDKs & APIs

talk to Bee from your code

- **bee-js** `bee-js.ethswarm.org`
- **Bee HTTP API** `docs.ethswarm.org/api`
- **swarm-cli · Swarm MCP** `ethersphere/swarm-mcp`
- **Bee (Go source)** `ethersphere/bee`



SCAN QR → BEE-JS DOCS

Gateways & Deploy

ship & inspect

- **Beeport** `beeport.ethswarm.org`
- **Public gateway** `gateway.ethswarm.org`
- **View by hash** `bzz.limo/bzz/<hash>/`
- **Local test network** `/.../starting-a-test-network`
- **SwarmScan** `swarmscan.io`



SCAN QR → DEPLOY & GATEWAY

Claude Code + Skills

AI-assisted dev · optional

- **swarm-quickstart-skills** `ethersphere/...`
- **/swarm** detects setup, routes you
- **/swarm-setup-bee · /swarm-stamps**
- **/swarm-upload-download · /swarm-host-website**
- **/swarm-troubleshoot** when stuck



SCAN QR → SKILLS REPO

LEARN

Get Started

your first 30 minutes

- **What is Swarm** `/concepts/what-is-swarm`
- **Developer intro** `/develop/introduction`
- **Bee node quick-start** `/bee/installation/quick-start`
- **Full install guide** `/bee/installation/getting-started`
- **Fund your node** — any EVM chain/token `fund.ethswarm.org`
- **Swarm papers** `papers.ethswarm.org`



SCAN QR → GET-STARTED HUB

Key Concepts

how it actually works

- **DISC** `/concepts/DISC`
- **Incentives & BZZ** `/concepts/incentives/overview`
- **Postage stamps** `/.../buy-a-stamp-batch`
- **Feeds** `/.../tools-and-features/feeds`
- **Manifests** `/.../manifests · Chunk types` `/.../chunk-types`



SCAN QR → DEEP-DIVE ON CONCEPTS

Developer Guides

recipes for common builds

- **Upload & download** `/develop/upload-and-download`
- **Host a website** `/develop/host-your-website`
- **Files & directories** `/develop/files`
- **Routing for SPAs** `/develop/routing`
- **Dynamic content (feeds)** `/develop/dynamic-content`
- **Multi-author blog · Access control (ACT)**



SCAN QR → ALL DEVELOPER GUIDES

COMMUNITY & SUPPORT



- **Discord** `discord.ethswarm.org`
- **GitHub org** `github.com/ethersphere`

- **Bee FAQ** `/docs/bee/bee-faq`
- **Foundation blog** `blog.ethswarm.org`

- **Swarm homepage** `ethswarm.org`
- **Docs home** `docs.ethswarm.org`