Canton

Canton Network FAQ

A searchable guide to understanding Canton, connecting to the network, and the common questions as institutions and providers get started.

Where finance flows.

Find what you need

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01

Understanding Canton

What Canton is, how it differs, and who runs it.

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What is Canton?

Canton is the only public blockchain that enables regulated financial institutions and markets to securely and directly exchange assets and cash across applications at global scale. It creates a unified network, where each participant keeps control over their business data, and shared “synchronizers” order transactions across participants without seeing the underlying business data.

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How is Canton different from other blockchains?

Financial institutions have long recognized the potential of blockchain, but until now all the options forced a trade-off: legacy public blockchains that offer full transparency and composability, but without the privacy and control regulated markets require, or private blockchains that create isolated silos. Canton was built to eliminate that trade-off, combining institutional-grade privacy with the openness, interoperability and scalability of a public blockchain to enable real-world capital markets onchain.

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How is the Canton Network a public network exactly?

The internet functions as a public network, but not all websites are public or permissionless. Canton mirrors this model. Think of your bank’s customer portal. While everyone can connect to Canton, not every application on it will be open or permissionless (meaning not everyone can connect to or use every application). The smart contract language empowers application owners to determine the level of openness and privacy for each application. This means that Canton supports the full spectrum – from fully permissionless applications to entirely private ones – all operating on an open network that allows applications to interoperate with one another.

Who validates transactions in different applications depends on the privacy/openness settings as determined by the operator of each application. Because of these characteristics, Canton is public but also provides granular control over permissioning, and optionality to choose which synchronizers to use for different transactions. This enables a blended network of independent apps and networks, where composability across these is determined by the utility provided to participants and never sacrifices the control and privacy that operators and participants require.

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Canton is sometimes misrepresented as a private permissioned network. Why is this wrong?

That gets Canton backwards. Canton is permissionless at the network layer and sovereign at the application layer. Like the internet, different applications can have different privacy, governance, and operational models without changing the openness of the underlying network. Some apps on Canton are public; some are private. Some use decentralized synchronizers; others use dedicated, single operator run ones.

At the network level, Canton has no single point of failure; the Global Synchronizer is operated by ~60 independent Super Validators using BFT consensus, and no single actor can unilaterally control or censor the network. Across Canton more broadly, there are 800+ Validators organized into tens of thousands of validation groups.

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Is Canton open source?

Yes. The core Canton protocol, the Daml SDK, and Splice (which implements the Global Synchronizer's node software, Canton Coin, and governance) are open source, maintained on github, with independent governance by the Canton Foundation. Key features that have been added, such as the Wallet Gateway, are also open source with no contract required. For full architectural details, see the Canton Network documentation.

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What is Daml?

Daml is an open-source smart contract language originally designed by Digital Asset, and is the native smart contract language for Canton Network and its applications.

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What is the difference between Canton, Digital Asset and Canton Foundation?

Canton Network is the decentralized public blockchain network, underpinned by open source technology and open governance facilitated by Canton Foundation.

Digital Asset (DA) is the privately owned software company that created the original technology behind Canton Network, and its smart contract language Daml. DA gave Canton to the world in 2024 when Canton Network MainNet launched and does not own Canton Network or the open source protocol. DA remains a core contributor to the open source code and creates applications and services to help organizations put Canton to work. DA also provides enterprise-grade support and professional services to institutions using Canton Network. Today DA is just one of the ~60 Super Validators and one of hundreds of providers delivering onchain applications on the network.

Canton Foundation is an independent non-profit organization established to independently manage the governance of Canton, ensuring no one organization has control over the network. It is entirely independent of Digital Asset, and anyone can request to become a member.

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Who can participate?

Anyone can start participating in Canton with a wallet. Anyone can apply to become a Validator operator via the foundation. Anyone can work with an existing foundation member to submit a proposal to become a Super Validator. Anyone can build an application and submit a request for featured application status. Applications then define access rules for their applications and assets — allowing everything from entirely permissionless applications, to permissioned institutional grade apps to be created.

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How to connect and build on Canton

Building apps, running a node and integration choices.

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How do I set up and run a Validator node? What do I need?
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What's the typical sequencing for an institution to connect to Canton?
What are the most common blockers when onboarding to Canton?
What's the single most useful early step to de-risk a pilot timeline?

Getting started

How do I build an app on Canton?

You can leverage tools from across the ecosystem to create apps and bring assets to the network, or create your own applications from scratch. To start building your own Canton app, define the business logic using Daml, Canton's smart contract language (open source on github), and then connect your applications to users through a backend, frontend, wallet, or institutional system.

In simple terms:

- Model in Daml — assets, permissions, transfers, settlement, compliance rules. Get started with Daml.
- Run and test locally using the Canton/Daml SDK and Canton QuickStart.
- Connect to Canton infrastructure through participant nodes and a synchronizer.
- Integrate your app with APIs, wallets, custody, identity, or existing systems.
- Deploy to the network and decide who can use the app, what data they can see, and how it interoperates with other Canton applications.

Canton apps are designed for privacy, control, and composability from the start, so builders can create financial applications that interoperate with the broader network without exposing sensitive transaction data. Firms in the ecosystem like DA help organizations and builders with best practice design support, pre-built tokenization solutions, APIs and infrastructure services for organizations that want to get started fast.

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How do I set up and run a Validator node? What do I need?

Anyone can apply for a Validator node via the Canton Foundation. Once approved, you can either run on-premise, or via experienced node-as-a-service (NaaS) providers — as listed on the Canton Foundation site.

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What are the basic steps to spin up a dev-net node?

Follow the step-by-step process in the Validator Self-Hosting Onboarding Guide. In brief: (1) fill out the network's foundation/onboarding form, (2) provide egress IPs for whitelisting — mandatory, since the network is financially gated, (3) allow roughly 7–10 days for IP propagation across the Global Synchronizer.

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How do we acquire "bandwidth" (network traffic)?

Through a bilateral commercial relationship with one or more Super Validators. Bandwidth can be funded with fiat (via a gas-station service, privately) or with Canton Coin directly (publicly). A simple mental model: think of it like a highway toll based on weight — you prepay into a traffic balance, and every transaction deducts from it based on its size.

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Do we need a signed contract to use Canton?

No — Canton itself (the core protocol, running a node, joining MainNet) is open source and doesn't require a contract with anyone. What can require a contract is a specific commercial application built on top of Canton, if you choose to use one. For example: onboarding as a DA Registry Provider requires a commercial agreement with DA (see the DA Registry Quickstart for current prerequisites). Other partners' commercial products (e.g., a system integrator's tokenization suite) will have their own separate contracting requirements. So the question isn't "does Canton need a contract" (it doesn't) — it's "does the specific application I want to use need one" (depends on the application).

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Integration choices

What versions should we be running?

Version compatibility between Canton and its application layer (Splice) changes over time — always confirm current recommended stable versions with a technical lead or the official Version Compatibility Dashboard rather than relying on a fixed number, since this evolves with releases.

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JSON API or gRPC — which should we use?

The API surface can change significantly between major versions. Ask a technical lead to advise based on your specific non-functional requirements before committing to an integration path.

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Should we use the native Ledger gRPC API or the JSON API for application integration?

The JSON API and gRPC API have differed significantly across major Canton versions historically. Get a technical lead to advise based on your specific requirements — particularly around long-term API stability and minimizing changes during version upgrades — before committing to one as your primary integration path for a production application.

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If we run our own dedicated synchronizer, do we still need to connect to the Global Synchronizer?

Dedicated synchronizers will also participate in the tokenomics of Canton over time, and so some form of connectivity with the Global Synchronizer will be required as this evolution happens. This is under active discussion via the foundation, so please get involved to shape the future and watch out for upcoming CIPs to discuss.

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Is there a way to run non-Daml (e.g., EVM/Solidity-style) solutions on Canton?

This is technically possible and an active area of R&D. An ERC-20-compatible middleware and indexer is in progress so non-Daml tooling can interact with Canton tokens without needing to learn Daml directly. The Polyglot Canton Whitepaper explores broader multi-language support (e.g., Solidity via Wasm) as a longer-term direction. Community members and ecosystem partners are independently building toward this today.

Check with the Canton Foundation for current status, and post any questions on this in the community channels (forum, Slack, Discord) since this is exactly the kind of fast-moving area where the community is often the fastest source of an accurate answer.

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Planning an implementation

What's the typical sequencing for an institution to connect to Canton?

Broadly: internal core technology project reaches completion → internal governance/approval process begins → formal Canton connectivity follows. This sequencing is fairly consistent across institutions and is a useful benchmark when planning a timeline.

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What are the most common blockers when onboarding to Canton?

Overwhelmingly, mundane technical readiness items — IP whitelisting/egress list approval, internal proxy configuration, and protocol-version mismatches inside an institution's own infrastructure — rather than anything exotic in the Canton protocol itself. Getting internal network/security teams engaged early avoids delay.

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What's the single most useful early step to de-risk a pilot timeline?

Requesting a live demo, sample data/artifact files, and a user guide as early as possible. Turning abstract documentation into something a team can actually test against consistently speeds up readiness — and it's worth escalating if these are slow to arrive.

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Canton’s architecture and governance

Synchronizers, Validators, the Foundation and Canton Coin.

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Synchronizers and the Global Synchronizer

What is a Synchronizer on Canton?

Synchronizers form the network infrastructure that coordinate transactions between participants and applications on the Canton Network. They ensure transactions are ordered, synchronized, and finalized with consistency guarantees, and without requiring every participant to see all transaction data.

Unlike traditional blockchains that rely on a single shared infrastructure, Canton apps and Validators can use and connect to multiple synchronizers, allowing applications to independently add their own infrastructure and compute capacity, while always maintaining privacy and atomic smart contract composability across the network. Read more about synchronizers and core concepts.

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What is the Global Synchronizer?

The Global Synchronizer is the decentralized interoperability backbone for the Canton Network. It provides an always-on, decentrally operated and Byzantine Fault Tolerant Canton synchronizer, available to Canton applications. Its infrastructure is operated and governed by a diverse and growing set of independent organizations — Super Validators — who coordinate their activities via onchain governance actions, and with support and independent facilitation by the Canton Foundation. Read more about the Global Synchronizer.

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Does Digital Asset own the Global Synchronizer?

Digital Asset did not create, and does not operate, the Global Synchronizer alone. The founding organizations of the Canton Network agreed to establish a decentralized and independently governed version of Canton's synchronization technology — to safely and securely connect applications and participants in a global network of networks. A number of firms then agreed to run this decentralized version of a Canton Synchronizer, and called it the Global Synchronizer.

This decentralized, interoperability backbone provides an organizationally neutral, independently governed, public infrastructure for ecosystem participants to compose and complete atomic transactions across apps and synchronizers, without giving up privacy or control.

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What does the Global Synchronizer do?

It is the interoperability backbone for apps to sequence, confirm, and atomically complete transactions with guaranteed consistency across independently operated Canton apps and their underlying infrastructure.

Unlike other networks, it's possible to compose and execute atomic transactions across independently managed Canton apps and synchronizers. Organizations can unlock the value of atomic transactions across blockchains, without the privacy or control trade-offs of other blockchain networks. The result is one network of independently controlled applications that can transactionally interoperate — without risky and complex bridges, or asynchronous message-based integrations.

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Is the Global Synchronizer the same as the Canton Network?

No, the Global Synchronizer is the decentralized interoperability backbone that can be used by participants in the Canton Network. The Canton Network is a unified public network that you can connect to with a wallet and start using interoperable assets and applications. It's an interoperable ecosystem of independently operated apps and assets, which can synchronize atomically, with privacy and control using synchronizer infrastructure.

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Validators and Super Validators

What is a Validator in the Canton Network?

A Validator is a Canton participant node that is connected to the Global Synchronizer and is interacting with Canton Coin in some way, shape or form. Unlike other blockchains, Validators in Canton are only active in transactions to which they are a party. So, to participate in applications using the Global Synchronizer, you would access a Validator — either directly, via a managed service, or through a turnkey wallet provider.

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Who can own or operate Validator nodes?

Anyone can operate a Validator node, but application providers define which nodes can connect to their app. There is no risk of an unknown Validator node validating, storing, or acting on data in a permissioned app.

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What is a Super Validator?

Super Validators are independent infrastructure providers that collaborate to operate and govern a publicly available, decentralized Canton Synchronizer. They operate an instance of a decentralized Canton synchronizer, as well as associated applications. Super Validators run the open source (Splice) Global Synchronizer and process its utility token, Canton Coin. Read more about Super Validators in the ecosystem documentation.

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What's the difference between a Validator and a Super Validator?

Running a Validator node is comparable to running an EVM node — it's your full node for participating in the network and your runtime for the applications you use, submitting and confirming transactions you participate in. However, unlike validators on other networks, Canton validators only participate and store a record of transactions you are involved in.

Super Validators are independent organizations that run the additional Super Validator software on their node to support the decentralized operation of the Global Synchronizer. They are eligible for rewards for providing this utility, and for additional commitments they make to bring useful activity to the network.

Becoming a Super Validator requires submission of a Canton Improvement Proposal (CIP), sponsored/endorsed by existing SVs, then approved by a 2/3 majority vote of Super Validator node operators. Decisions come from an SV vote rather than "the Foundation" as a body. Commitments and reward weightings are negotiated case by case; some Super Validators' commitments are fully public (searchable as CIP examples in the CIP repository — e.g., Societe Generale, Franklin Templeton), others are kept more private. You can view currently active Super Validators/Validators via the many live dashboards for Canton.

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How do you know who the Super Validators are?

Super Validator nodes are named and discoverable on the Canton Foundation's operations page. The Canton Name of the rights owner of each Super Validator node is visible in Canton Scan, which displays the official business name of the owner in the form "business-name-sv.cns.", using the official business name of the entity that owns the rights to that Validator node.

Super Validator operations are made transparent via the Canton Foundation and various market dashboards such as 5N Lighthouse.

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What is the Validator decentralization on the Canton Network?

Trick question — we don't need to prove this like public networks because all Validators operate independently, and are only party to the transactions they need to validate. If you're not part of the transaction then you are not involved in any form of validation for it.

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Do Super Validators act as a group entity, collective or consortium?

No. To the extent any changes need to be made to the configuration, membership, or other operational aspects of the Global Synchronizer, each Super Validator independently decides whether to make such change, and the change is implemented via the Global Synchronizer's consensus protocol when at least two-thirds of the Super Validators each independently arrive at the same decision.

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Do Super Validators see transaction data going over the Global Synchronizer?

As with all nodes on the Canton Network, only stakeholders to any given transaction are able to see it. So SVs don't see or validate the contents of transactions unless they are a party to the transaction. And the Global Synchronizer upholds the same privacy guarantees of any other Canton synchronizer.

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Do Super Validators process or see my transactions?

No. A Super Validator does not send, receive, or stand in the middle of any transaction. For Canton Coin specifically, it only cryptographically confirms that a state transition was executed correctly. For every other transaction, it is part of a consensus/sequencing layer that timestamps and distributes encrypted packets — it has no visibility into the transaction's content, or even whether the transaction is financial in nature.

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Why are there only 13 Super Validators shown online when Canton states there are ~60 Super Validators on the network?

There are ~60 Super Validators on the network. The reason data online shows 13 is because many Super Validators are currently running on a multi-tenant model with their votes coordinated and submitted by the hosting Super Validator. The Foundation is working to ensure that each individual vote will be shown online over time.

Check who is actually running infrastructure. To confirm whether a specific institution has an approved SV commitment (infrastructure or milestone-based), check the CIP repository.

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Can a Super Validator selectively refuse to process certain traffic?

Not really — an SV cannot pick and choose which transactions to process, because it isn't processing individual transactions in the first place; it's providing consensus/sequencing for the network as a whole. What SVs collectively can do, via a 2/3 majority vote, is block a specific Validator or party from connecting to the Global Synchronizer at all — for example, if that operator were identified on an OFAC sanctions list.

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Governance and the Canton Foundation

Who governs the Canton Network overall?

There is no single governing body for the whole ecosystem — each participant governs its own components. The Global Synchronizer specifically (the shared interoperability layer) is governed by a 2/3 majority vote of the operators running its decentralized synchronizer nodes, with no single Super Validator able to hold more than 25% of the vote. This governance process is facilitated by the Canton Foundation as is the governance of the underlying open-source software (Splice, which implements Canton Coin, network naming, on-chain governance, and public disclosure APIs).

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What governance and compliance or controls are in place across Canton?

Each application on Canton defines and configures its own governance, access and privacy controls, depending on the compliance requirements related to that application and its users.

Separately, the Global Synchronizer is decentrally governed by independently acting organizations that each run an instance of the Global Synchronizer, and uses 2/3 majority Byzantine Fault Tolerance consensus for message ordering and confirmation, and BFT majority voting on governance changes. This ensures that no single party can control the Global Synchronizer. Governance and improvement proposals related to the Global Synchronizer are transparently facilitated via the Canton Foundation, and voted for onchain by Super Validators.

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Who can participate in governance?

Any member of the public can propose a Canton Improvement Proposal (CIP). They can do this by creating a free account at groups.io and using that account to sign in to lists.sync.global. Sign up for the cip-discuss email group to propose a CIP. The Super Validators publish all vote results to the Scan API, and various providers make this data available to the public.

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Who proposes protocol changes to Canton and how can I propose changes?

Anyone can make proposals related to the core infrastructure via Canton Improvement Proposals via the Canton Foundation. These proposals are openly discussed in public forums and all Super Validators then vote to decide if CIPs are approved or not, based on a 2/3rds majority vote. There are currently 13 Super Validator operators who operate the software on behalf of all SVs, of which there are ~60, and these operators coordinate votes across all SVs.

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Who evaluates and approves CIPs (Canton Improvement Proposals)?

Decision-making sits with Super Validator node operators, who vote (2/3 majority required to pass) — not with “the Foundation” as a decision-making body. The Canton Foundation facilitates the process (editors, mailing lists, vote logistics) and governance is independently facilitated by the Canton Foundation itself with the actual approval authority from the SV vote itself.

Super Validators become Foundation members; the Foundation’s board includes senior leadership from institutions such as Euroclear and DTCC. Routine/recurring matters (like adjusting an underperforming SV’s reward weight) are delegated to standing working groups rather than requiring a fresh CIP vote each time.

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How transparent are proposals, votes and outcomes about Canton Network?

Proposals in the form of Canton Improvement Proposals and votes are public via the Canton Foundation CIP repository.

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What is the Canton Foundation (CF)?

The Canton Foundation is an independent foundation that facilitates neutral, transparent and fair governance of the network’s public infrastructure and open source code, spanning operations, technology and ecosystem development.

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What are the Canton Foundation and its members responsible for?

The Canton Foundation's mission is to foster the development and growth of the Global Synchronizer in the Canton Network and facilitate its governance.

The Canton Foundation will serve as a point of contact for all Super Validator coordination and votes according to the direction of its members. It will also maintain the recommended best practices for Super Validators so SVs can hold each other accountable in the operation of the Global Synchronizer.

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Who can join the Canton Foundation?

Any organization can apply to join the Canton Foundation as a Member via the Canton Foundation website. Three packages are available. Visit canton.foundation for more information.

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How do we stay on top of Foundation communications without being overwhelmed?

Foundation mailing lists and communication channels are high-volume, and important items (like a rewards vote) can get lost in the noise. Subscribe to the official mailing lists directly rather than relying on a shared inbox, and prefer a curated summary/digest over trying to read the raw feed.

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Canton Coin and tokenomics

What is Canton Coin?

Canton Coin is the utility token used to pay traffic fees across the Global Synchronizer and to incentivize real world, high utility transactional activity on the network.

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What are Canton's tokenomics?

Canton Coin's tokenomics are designed to reward utility. The token is used to pay network fees, which are burned, and new coins are minted only to participants who contribute value to the network through applications that generate these fees, operate infrastructure, or participate in activity through their node. A built-in Burn-Mint Equilibrium mechanism automatically balances token supply with real network usage, helping align the economics of the network with its growth over time.

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How do Canton Coin's tokenomics work?

Canton Coin (CC), the network's native utility token, was designed to reward real network usage over speculation. It aligns the success of the network with the participants who make it work, fairly rewarding app builders and app users, as well as those operating decentralized infrastructure. The result is a fundamentally different model where rewards flow to those creating value through real activity, not only miners or early investors.

Canton's tokenomics sidestep the pitfalls seen in earlier networks:

- **No pre-mine, no VC allocations:** Every token in circulation has been earned by delivering utility.
- **Burn-and-Mint equilibrium:** Usage fees are burned, and new coins are minted based on participation. This keeps supply responsive to demand and ties value to network usage.
- **Enterprise-grade transparency:** Even though transactions on Canton are private by default, reward distributions and Canton Coin fees are published, providing insight into what's driving value without compromising privacy.

Read more about Canton Coin.

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How are rewards calculated?

There isn't one single pool split proportionally — there are distinct reward streams: Validator rewards (proportional to traffic volume), Super Validator rewards (by tier/weight), and application rewards (based on the traffic volume generated by a participant's own application). A separate flat "active Validator" reward that once existed has been phased out via governance vote. Rewards mint every 10-minute round. Reward weights can also be reduced after the fact for underperformance through governance votes.

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Who can mint Canton Coin?

Certain participants in the Global Synchronizer ecosystem are able to mint Canton Coin by performing activities that bring utility and value to the Canton Network:

- Super Validators can mint Canton Coin as a reward for operating an instance of the Global Synchronizer.
- Each party operating a featured application connected to the Global Synchronizer can mint Canton Coin rewards for bringing useful applications and transactional activity to the network.
- Each party operating a node that serves as an entry point into the Global Synchronizer — known as a Validator node — can mint Canton Coin as a reward for actively transacting across apps on the network.

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Are the SVs minting the coins, and then distributing these as rewards to the app builders?

No, app providers do not receive rewards from SVs; they have to mint their own Canton Coin. When there is a record of someone providing a useful activity to the network and the Canton Coin ecosystem, this input, or proof, is sent to the app provider to give them the chance to then mint Canton Coin. Super Validators do not hold Canton Coin on behalf of others and then distribute it.

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Who is likely to be a net user of Canton Coin?

Canton Coin is designed to be a utility token used to pay fees on the network, so in order to transact on Canton, organizations need Canton Coin, either held directly or as a traffic balance offered by a provider, a bit like airtime.

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What drives the value of Canton Coin?

Canton is unique because network participants use Canton Coin to pay for transactions, and this is linked to the extent of real economic activity it supports. Therefore, the value of the network correlates to the net utility i.e. fees, burned on the network — the same way any other company would be valued, based on the revenue it generates.

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How can I buy or get hold of Canton Coin?

Every Canton Coin that comes into supply is earned. It's continuously distributed based on apps, users and infrastructure providers' contributions to network utility.

If you are looking to purchase it to cover traffic fees, Canton Coin is generally available through a growing list of wallets, custodians and exchanges or Traffic balance management applications like the Denex Gas Station.

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Do I have to hold Canton Coin to use Canton?

No. A third-party "gas station" service can convert fiat into network traffic on your behalf, so you never need to hold or transact in Canton Coin directly. The coin burn happens in the background at the infrastructure/Super Validator level.

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Do I have to use or directly own Canton Coin to use the Global Synchronizer?

No. You can pre-pay for traffic in fiat, working with a provider on the network who can convert fiat into traffic credits. Privately run 'gas stations' are available to convert fiat into traffic credit for customers. This is not a purchase of Canton Coin. Buying traffic credits is similar to buying bandwidth from your mobile network provider — you don't own bandwidth, you are simply buying the ability to use the network for a pre-agreed term/amount.

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How much are typical transaction costs or gas fees on Canton?

Canton Network fees are designed to be predictable and are fixed in USD terms rather than determined by congestion-driven auctions. It's deterministic per transaction (unlike Ethereum-style variable gas fees) and prepaid, but the underlying $/MB rate is not fixed — it is continuously and dynamically tuned by Super Validators to hold the cost of a typical Canton Coin transfer near a $1 USD target, adjusting as transaction sizes or the coin's conversion rate change. Always check the current live rate rather than relying on a specific historical figure, since it moves over time by design.

In addition, participants earn Canton Coin rewards for contributing utility to the network through applications, activity, or infrastructure, helping offset costs of network usage over time with a predictable transaction fee based model.

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04

Tokenization of assets and cash

What is live today, the cash leg and token standards.

4 questions in this section

Who is using Canton and what are the benefits?
Who and what is live on the network?
What cash-leg options exist on Canton today?
What are the token standards or formats? (i.e. ERC20/ERC 721)

Who is using Canton and what are the benefits?

Canton Network leads the way for the tokenization and mobilization of traditional, regulated real world assets and cash. $8T+ of tokenized real-world assets are processed on the network every month, and securities of all kinds have been natively issued on the network — from bonds to mortgages, and from insurance to commodities.

- DTCC's tokenization service is bringing DTC custodied U.S. Treasuries and other assets to Canton to drive global collateral mobility.
- Lloyds, HSBC, JPMorgan, LSEG and others are ramping up Tokenized Deposits for use in 24/7 settlement, collateral and financing flows on the network.
- Issuers reduce issuance to settlement times from 5 days to sub-60 seconds e.g. Goldman Sachs.
- Repo participants using Canton based solutions like Broadridge DLR save $3M+ a year.

By unlocking such assets and flows independent analysis highlights the potential for a 30–50% improvement in effective balance sheet capacity by mobilizing assets and collateral on Canton.

Live in market for over ten years, the core technology of Canton is used in production systems by the world's leading financial institutions, driving multi-million dollar annual cost savings, accelerating issuance and settlement times to seconds, and significantly reduce settlement, counterparty and operational risk.

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Who and what is live on the network?

Many Digital Asset customers have live applications, assets or services on Canton today, e.g. BNP Paribas, Broadridge, DTCC, Goldman Sachs, Circle, Franklin Templeton, HSBC, iCapital, EquiLend, Kaiko, Novaprime, Tradeweb, and many more. The best place to stay up to date is the Canton Network ecosystem page.

Organizations participate in the Canton Network in a variety of ways, either as asset issuers into the network, application providers, participants (Validators) connected to, and taking part in, those applications, or Super Validators running the Global Synchronizer. Keep up to date with the latest Validators, SVs and apps on the network via the many public network dashboards available, and the Canton Foundation site.

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What cash-leg options exist on Canton today?

More than one, and the landscape is evolving: Canton-native USD stablecoin variants (e.g., USDCx live, with others onboarding) and traditional cash-settlement rails (e.g., HSBC, Lloyds and JPM tokenized deposits, and LSEG-provided GBP/USD cash legs) have all been used in trades. Don't assume a single standard cash leg — confirm which specific option a given venue/counterparty supports for your use case, since this is one of the fastest-moving parts of the ecosystem.

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What are the token standards or formats? (i.e. ERC20/ERC 721)

The ecosystem has aligned around the Canton Token Standards (CIP-0056 and CIP-0112). Token standard assets are fungible and immediately composable across applications.

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05

Wallets, custody and infrastructure

Wallets, custody providers and node hosting options.

5 questions in this section

What is a wallet used for on Canton?

Signing transactions. Default key management options include Keycloak or GCP KMS, and a custom KMS driver is also supported. The Validator node wallet UI (the “splice” layer) is specifically for Canton Coin entry/management and is separate from transaction-signing wallets.

Known wallet/custody providers active in the Canton ecosystem include Copper, Dfns, Fireblocks, BitGo, and Zodia — not an exhaustive list; refer to the ecosystem directory for the current full set.

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What is “Wallet Gateway”?

An open-source component (license available on its public code repository, but no contract needed) that lets a participant run its own node with its own internal key management, and facilitates transaction signing for flows initiated on execution venues. It is distinct from — and does not require — the DA Registry app’s signed contract.

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Who can provide custody of Canton Coin?

All the leading digital custodians and wallet service providers are now live on the Global Synchronizer and support Canton Coin including Fireblocks, BitGo, Blockdaemon, Zodia and a range of self custody wallets and wallet infrastructure.

The Canton wallet and custody ecosystem offers users and app providers the freedom to choose how they manage their assets or support their users — from self-custodial to fully custodial options, enterprise-grade to retail wallets, and hot or cold key storage. Every participant from the most regulated institution, to HNWI investors, and retail users, can connect and transact securely in a way that best suits their needs. App providers and new wallet, custody and exchange providers can also easily integrate through the wallet SDK. Browse wallet providers on the Canton ecosystem page.

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What are our options for running infrastructure?

Self-host, or use a Node-as-a-Service (NaaS) provider. NaaS is faster to stand up (days vs. weeks); self-hosting is often recommended for teams that want deeper familiarity with the technology. Get direct quotes from NaaS providers, or institutional wallet providers.

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What are the server and infrastructure requirements for running a Super Validator?

Indicatively: three VMs in a Kubernetes cluster, each roughly equivalent to a GCP e2-standard-8 machine, with data storage in the tens of GB and growing over time. A typical split is VM1 for the participant node and applications, VM2 for the sequencer and mediator, and VM3 for the ordering service.

There is no software license cost to run a Super Validator — the software is provided with redistribution rights; paid support is available separately from Digital Asset if wanted.

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06

Technical, risk and compliance

Privacy, architecture, security and the regulatory position.

19 questions in this section

Privacy and data

What levels of privacy are offered?
Does the protocol offer anonymity?
Does the protocol offer confidentiality?
Does the network see the economic details of my trade?
To what extent is data shared across nodes? (i.e. full replication)
How is permissioning controlled and administered?

Protocol architecture and performance

What is the consensus mechanism?
How high is the node scalability?
What is the transaction or accounting model (Account/UTXO)?
What types of identity access are supported?
Is Max Extractable Value (MEV) and front running activity possible on Canton?
Does Canton use Zero Knowledge Proofs (ZKPs)?
How does Canton enable privacy and interoperability without relying on ZK technology or public settlement layers like Ethereum?

Security and resilience

What security practices exist around the Super Validator software and network?
What key management options exist beyond AWS or GCP KMS?

Risk, regulation and compliance

Canton has configurable privacy rather than being a fully private network — so how is AML/KYC even possible?
What level of KYC is required?
Could a sanctioned party inadvertently end up receiving network fees, the way sanctioned miners or Validators have been a concern on other chains?
How can we avoid holding Canton Coin on our balance sheet?

Privacy and data

What levels of privacy are offered?

Canton offers a level of privacy beyond any other blockchain: subtransaction privacy. It's possible to run a single atomic transaction like a DvP in such a way that the trading partners see the whole transaction, the payment provider (e.g. bank) sees only the payment flow, and the asset provider (e.g. tokenizer) sees only the asset movement.

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Does the protocol offer anonymity?

Canton offers privacy, not anonymity. Data is segmented, not fully replicated, meaning that each piece of data is configured at the smart contract level to determine who is allowed to receive, modify, validate or view the data:

- If you are a member of a stakeholder set, you will see and store the data, and you'll see the identities of the other members of the group.
- If you're not a member, you'll never see the data or store it, or know who is in the group.

This asymmetric view is consistent with capital markets requirements where some parties MUST know (e.g. an issuer, the CSD, a regulator) and others MUST NOT know (e.g. other participants on the exchange).

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Does the protocol offer confidentiality?

Yes.

- Members of a stakeholder group know each other and see the data they share, but this information is confidential to the group.
- If you're not a member of the group, the actions of the group are not accessible to you.

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Does the network see the economic details of my trade?

No. Only Canton Coin transactions are public by design. Ordinary business transactions (an asset transfer, a repo, a settlement) remain private between the parties involved.

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To what extent is data shared across nodes? (i.e. full replication)

Data is segmented and replicated only to those nodes permissioned to view the data. This segmentation is preserved even when composing transactions across privacy sets.

Data is not copied from one node to another in the Canton protocol. Instead it is created independently and synchronously by separate nodes, and only if they are parties to a given transaction. No node receives all transactions, so no node creates a copy of all data on the network.

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How is permissioning controlled and administered?

- The operator of the infrastructure supporting an app decides who can connect to that infrastructure.
- The operator of the app also defines who can modify, validate, and see all data at a smart contract by smart contract level.

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Protocol architecture and performance

What is the consensus mechanism?

We have two layers of consensus in Canton — transaction validation, and transaction ordering. On the validation side, Canton has a unique 'Proof-of-Stakeholder' consensus mechanism where only specifically named parties in the smart contract are part of the Validator set. In most cases, all parties to the transaction must agree that the transaction is valid. On the sequencing side, Canton allows for pluggable consensus with the overwhelming majority of Canton users opting for a centrally sequenced component running on pSQL.

The Global Synchronizer uses a BFT protocol for transaction ordering consensus, and uses a 2/3 majority for validating transactions performed by the Super Validators operating the Global Synchronizer.

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How high is the node scalability?

Because Canton is a federated protocol, there is no known boundary to node scalability. If a given synchronizer becomes overloaded, applications may direct their traffic to an alternate synchronizer. If a given participant node becomes overloaded with validation requests, it can move parties involved in some of those validations to other participant nodes.

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What is the transaction or accounting model (Account/UTXO)?

UTXO.

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What types of identity access are supported?

Canton integrates with OAuth2-compliant identity access providers.

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Is Max Extractable Value (MEV) and front running activity possible on Canton?

No. Canton transactions are validated and committed by their stakeholder participants. Once sequenced, a confirmation request can no longer be reordered. The sequencer who has control over the ordering does not see transaction contents due to Canton's privacy. So MEV in the usual sense is almost impossible to realize in Canton without sophisticated collusion between multiple parties or the ability for miners or bots to identify patterns that enable the front-running of trades.

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Does Canton use Zero Knowledge Proofs (ZKPs)?

No, Canton achieves privacy through the protocol and smart contract programmability. The real question is whether ZKPs are the right fit for institutional finance. In many cases, they are not. Institutions need strong data privacy controls, operational clarity, and regulatory acceptability. ZK systems introduce a huge amount of complexity and attack surface, without tackling the most important security problems. Canton's position is not anti-ZKP; it is that for regulated assets, simpler and more governable privacy architectures like that of Canton are most often the better engineering and compliance choice.

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How does Canton enable privacy and interoperability without relying on ZK technology or public settlement layers like Ethereum?

Privacy is easy but privacy with consensus is hard. The question isn't how Canton achieves privacy; it's how Canton achieves consensus while maintaining privacy.

Most chains didn't start with privacy in mind, so they had to bolt it on after the fact. Their underlying assumption is "everyone needs to verify everything". To match that trust model when you add privacy, ZKP is the only way to allow everyone to verify everything including private data.

Canton's insight as early as 2015 was that you don't need everyone to verify everything. You only need stakeholders to verify state that's relevant to them. That's a much easier problem to solve, and once you have the right data model and protocol to distribute encrypted data, you can use classical BFT algorithms for consensus. In Canton, each smart contract carries data on who the stakeholders of that contract are. So the Validator can run a consensus round on each contract separately, only with the stakeholders of that contract.

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Security and resilience

What security practices exist around the Super Validator software and network?

The core software development process includes mandatory peer review, automated security testing in CI/CD, open-source dependency/vulnerability scanning, restricted build-pipeline access, and use of ephemeral build environments. Third-party auditors are engaged for annual penetration testing and security audits of externally exposed services. Multiple independent Super Validators are also known to run their own audits of the underlying open-source codebase.

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What key management options exist beyond AWS or GCP KMS?

AWS and GCP KMS drivers are available out of the box for licensed enterprise users. For other key management systems or hardware security modules, a general-purpose “KMS Driver” plugin interface (introduced in a mid-2.x software version) allows custom integrations — these must currently be implemented on the JVM (Scala only).

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Risk, regulation and compliance

Canton has configurable privacy rather than being a fully private network — so how is AML/KYC even possible?

Firstly, let’s be clear: Canton is not a private network — it implements granular privacy control through configurable, sub-transaction privacy, meaning each party sees only the data it’s a party to or entitled to see, and what’s shared/visible can be configured per application.

Given that, AML/KYC works in the same way that it would in any permissioned model: each asset issuer or application is responsible for AML/KYC of its own direct users. Super Validators have no visibility into other participants’ assets and can’t perform network-wide monitoring. This is conceptually similar to how individual internet applications, not the internet itself, are responsible for policing their own users.

As one concrete example: Circle has full visibility into the USDC cap table and performs AML monitoring and KYC for its direct minting/redemption counterparties. Canton Coin itself is fully transparent, and specialized providers (Elliptic, TRM) support AML monitoring specifically for Canton Coin.

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What level of KYC is required?

You can control KYC requirements on an app by app basis, and also at the infrastructure layer by permissioning synchronizers.

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Could a sanctioned party inadvertently end up receiving network fees, the way sanctioned miners or Validators have been a concern on other chains?

No — because of how the fee mechanism works. When a participant “pays” the traffic fee in Canton Coin, they aren’t transferring coin to any recipient (SV or otherwise); they are burning it from their own holdings. There’s no transfer to a counterparty for that fee payment to inadvertently reach.

The only point where a regulated entity is actually acquiring Canton Coin from a counterparty is when it first buys/acquires the coin — and at that stage, the acquiring institution can choose its seller and screen for sanctions exposure the same way it would for any other asset purchase.

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How can we avoid holding Canton Coin on our balance sheet?

Common options: (1) disable coin earning and pay for traffic in fiat via a third-party gas-station service or node operator, (2) delegate coin holding to a separate entity or use escrow to defer minting, or (3) have a counterparty buy traffic on your behalf and adjust trade economics accordingly. Some institutions are instead choosing to hold coin directly on their balance sheet as an emerging alternative path.

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Where to go next

Three ways to move from reading to doing.

Explore the ecosystem

See who is live on the network, and find applications, wallets, custodians and node providers at canton.network/ecosystem.

Connect or build

Apply for a Validator node and find node-as-a-service providers at canton.foundation/validators, or start with the technical documentation at docs.canton.network.

Take part in governance

Anyone can propose a Canton Improvement Proposal. Proposals and vote outcomes are public in the CIP repository, and organizations can apply to join the Canton Foundation at canton.foundation.

Where finance flows.

Version 27 July 2026. Figures, participants and ecosystem details in this guide move quickly — confirm anything time-sensitive before relying on it. Questions about this document: marketing@digitalasset.com.