CASE STUDY

Migrating Lynq from Private, Permissioned Ethereum to a Permissioned Avalanche L1

How Tassat modernized institutional settlement infrastructure while preserving privacy, controls, and operational continuity

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1. Executive Summary

In 2026, Tassat Group upgraded Lynq -- its real-time settlement and collateral network for institutional digital asset markets -- from a private, permissioned Ethereum network to a permissioned Avalanche L1. The migration preserved the privacy, governance controls, and auditability of the legacy platform while delivering deterministic sub-second settlement finality, improved operational tooling, and a foundation for governed interoperability with assets and ecosystems across the Avalanche network.

Production cutover was completed in less than 2 hours during a scheduled maintenance window with full state continuity — all positions, integrations, and workflows carried over without disruption. The upgrade positions Lynq to serve the next phase of institutional growth across settlement, collateral mobility, and on-chain treasury management.

At a glance

- Legacy settlement layer: private, permissioned Ethereum (Proof-of-Authority).
- New settlement layer: permissioned Avalanche L1 (Subnet-EVM) with controlled validators and restricted data synchronization.
- Design goals: deterministic finality, protocol-level permissioning, auditability, and future interoperability.
- Migration strategy: phased rollout with state snapshot to protect data privacy.
- Ecosystem scale: 30+ institutional participants;
- Previous TassatPay infrastructure (that Lynq is based on) has settled more than $2.5 trillion in transactions.
- Performance: approximately 65% faster processing observed in key settlement workflows.

Reduction in Time to Transaction Finality	Chain Reorgs	Infrastructure Cost Savings
65%	0	50%

2. Background

Tassat first deployed tokenized deposit and payments capabilities on a private, permissioned Ethereum network in 2019. Operating behind a controlled perimeter provided predictable block production and a familiar EVM environment suitable for regulated financial workflows. The same platform technology went on to power Signature Bank's Signet and Customers Bank's CBIT network, which collectively processed more than $2.5 trillion in real-time transactions.

Lynq extended this foundation into tokenized securities, real-time settlement, and collateral mobility for institutional digital asset markets. As institutional adoption accelerated and the regulatory landscape matured — with MiCA in effect in the EU and the GENIUS Act enacted in the United States — the organization sought a settlement layer that preserved permissioned controls while reducing technology lifecycle risk and enabling tighter integration with public-permissioned asset ecosystems.

3. Requirements and Evaluation Criteria

Tassat evaluated alternatives across technical, operational, and institutional dimensions:

- EVM compatibility to protect years of Solidity-based smart contract and compliance logic investment.
- A permissioning model aligned with regulated workflows restricting who can transact, deploy contracts, and synchronize chain data.
- Deterministic finality to support legally defensible settlement timing.
- Predictable performance isolated from unrelated network traffic.
- Governance auditability: an immutable, on-chain record of validator changes and administrative actions.
- Mature tooling, documentation, and active ecosystem partnership.
- Financial and organizational stability of the protocol provider.

4. Decision: Why Avalanche L1

Avalanche was selected because a dedicated L1 can be operated as sovereign infrastructure: controlling validators, configuration, fees, and upgrades while remaining interoperable with the broader Avalanche ecosystem. For Lynq, this was the key distinction — operating infrastructure the platform governs, rather than renting capacity on infrastructure someone else governs.

Six properties that matter for regulated securities workflows

Property	Why it matters for Lynq
Deterministic settlement finality	Sub-second finality with no risk of chain reorgs enables legally defensible settlement timing for DvP, corporate actions, and regulatory reporting.
Protocol-level compliance controls	Stateful precompiles enforce transaction allow lists, deployer allow lists, fee management, and minting authority at the chain layer — defense in depth for compliance.
Auditable validator governance	On-chain Validator Manager contract creates an immutable audit trail of every governance decision, answerable to regulators via a chain query.
EVM compatibility	Existing Solidity contracts, ABI tooling, wallet libraries, and indexers function without modification — scoping migration as infrastructure change, not a platform rewrite.

Property	Why it matters for Lynq
Predictable economics	Dedicated validator set and fee market eliminate exposure to fee spikes from unrelated traffic; fees can be tuned or set to zero.
Native cross-chain messaging (ICM)	First-party protocol for verified messages between Avalanche L1s and C-Chain — governed interoperability without third-party bridge trust assumptions.

5. Migration Approach

Tassat executed the migration in four phases, each designed to validate configuration, tooling, and application compatibility before advancing to the next environment.

Phase 1 — Research and preparation

The team stood up a test Avalanche L1 as a sandbox and confirmed that application changes were minimal — primarily node connection parameters. A state-snapshot migration strategy was selected over full transaction replay, and the snapshot was applied as a state upgrade (rather than at genesis) to protect the privacy of user data. Operational automation included multi signature governance of validator management contracts and automated monitoring of validator AVAX balances required to cover continuity fees on the primary network.

Phase 2 — Internal development and testing

Internal environments were migrated first. Full regression and performance testing revealed minimal issues and confirmed meaningful workflow latency improvements.

Phase 3 — User acceptance testing (UAT)

UAT was observed for several weeks to confirm stability. The migration was designed to be invisible to end users; the only notable feedback was that transactions felt faster.

Phase 4 — Production cutover

Production migration was completed during a scheduled maintenance window, with platform availability restored in approximately 1 hour 49 minutes. Full state continuity ensured no disruption to existing positions, integrations, or operational workflows.

6. Cutover Timeline

The production cutover followed a structured timeline with defined communication, validation, and rollback gates.

Milestone	Timing	Description
Stakeholder notification	T-7 days	Scheduled maintenance window communicated to all institutional participants and internal teams.
Final UAT sign-off	T-24 hours	UAT regression suite completed; go/no-go decision confirmed by engineering and operations leads.
Maintenance window opens	T-0 (08:03 ET)	Platform taken offline; legacy Ethereum chain stopped and state snapshot captured.
State snapshot applied	T+30 min (approx.)	Snapshot migrated to the new Avalanche L1 via state upgrade; addresses, balances, and contract state verified.
Validation gates passed	T+60 min (approx.)	End-to-end smoke tests completed against production Avalanche L1; monitoring confirmed healthy.
Platform restored	T+1h 49m (09:52 ET)	Platform reopened to users; all positions and integrations operational.
Post-cutover monitoring	T+24 hours	Extended monitoring period; no issues reported; first live transactions confirmed.

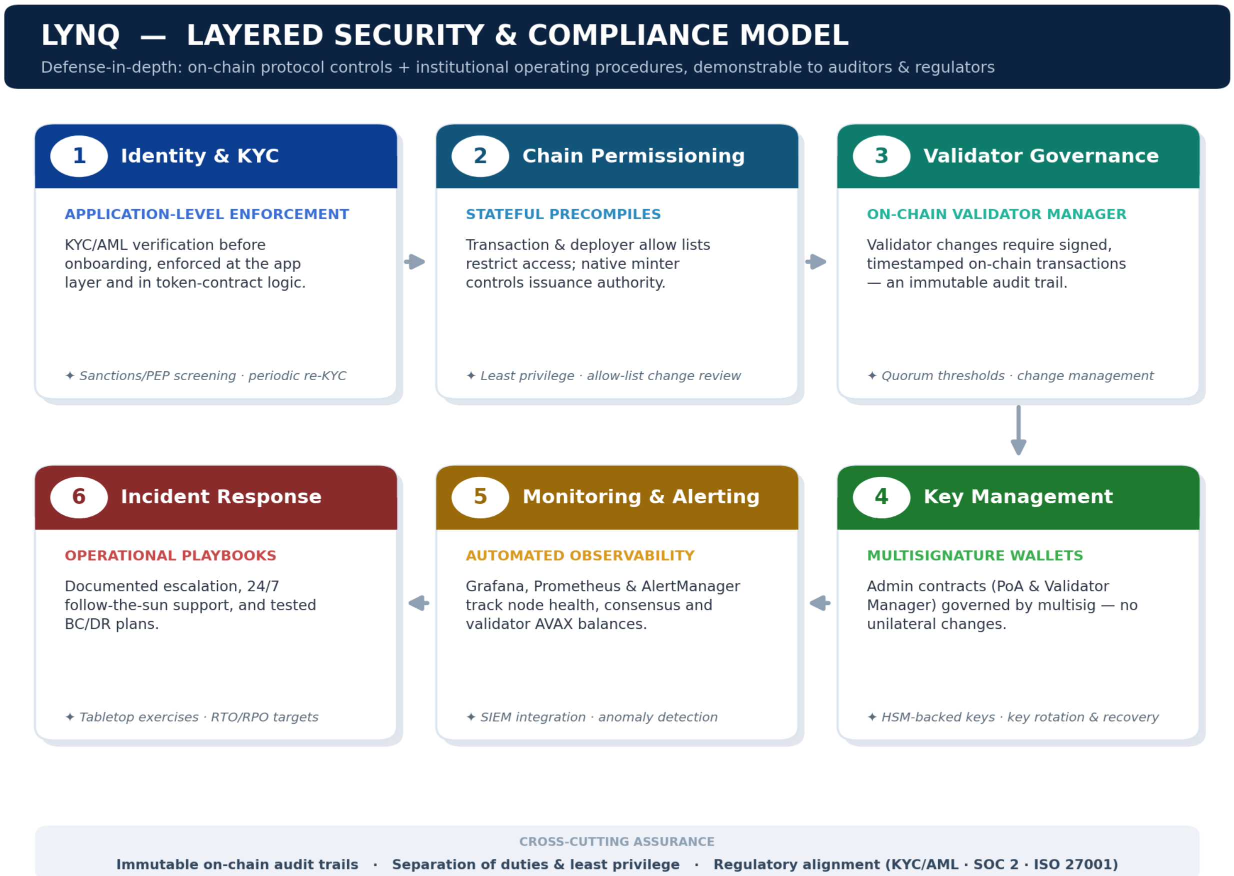
7. Before vs. After: Performance and Capability Comparison

The table below summarizes the key differences between Lynq's legacy settlement layer and the new Avalanche L1.

Metric	Legacy (Ethereum PoA)	New (Avalanche L1)	Improvement
Settlement finality	Probabilistic (block confirmations)	Deterministic (sub-second)	Legally defensible timing
Workflow latency (select paths)	82 seconds/100 payments	45 seconds/100 payments	~65% faster processing
Fee predictability	Controlled (private chain)	Controlled + tunable via FeeManager precompile	Dynamic adjustment without hard fork
Validator governance	Off-chain signer management	On-chain Validator Manager with immutable audit trail	Regulator-ready, auditable governance
Interoperability	None (isolated private chain)	Native ICM to C-Chain and other Avalanche L1s	Governed cross-chain messaging
Consensus mechanism	Clique PoA (deprecated in go-ethereum v1.14)	Snowman consensus (actively maintained)	Eliminated lifecycle risk

8. Permissioning and Governance Controls

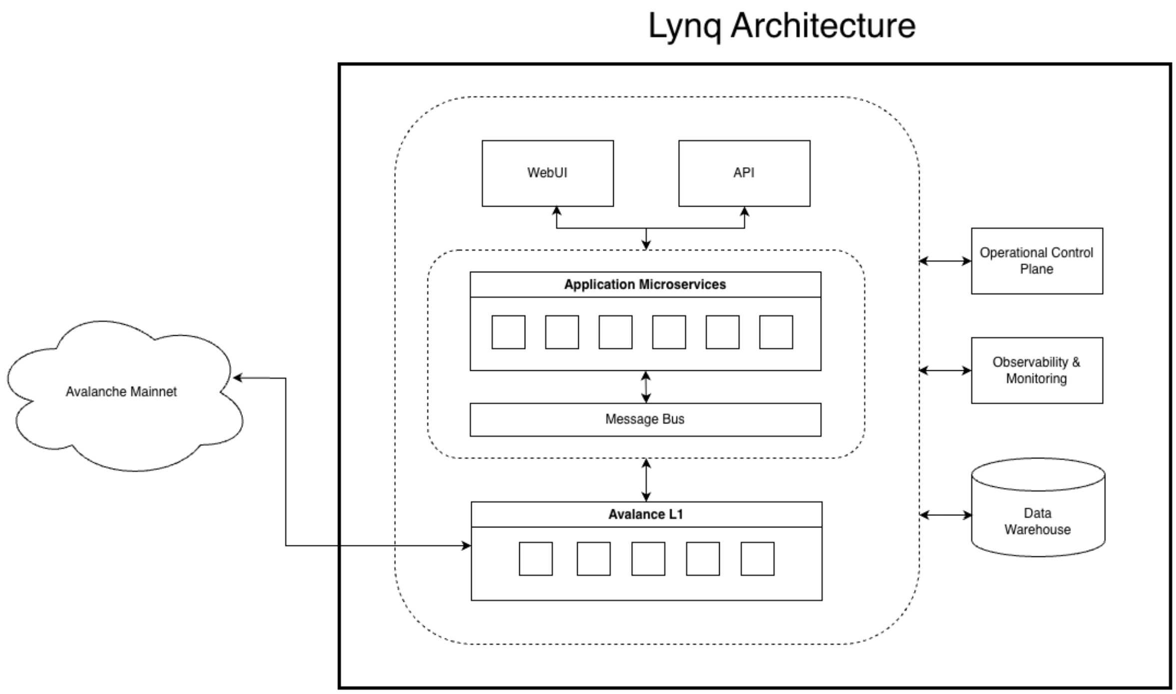
Lynq employs a layered security and compliance model that combines on-chain protocol controls with institutional operating procedures. The model is designed to be demonstrable to auditors and regulators.



9. Architecture Snapshot

Lynq is deployed as a cloud-native platform combining application services, data infrastructure, and blockchain nodes in a controlled operating environment. Key elements include:

- Client and admin interfaces (React / NodeJS).
- API gateways and Java microservices with Kafka message bus.
- PostgreSQL database and Spark / Airflow data warehouse on Kubernetes.
- Avalanche L1 blockchain nodes with restricted synchronization.
- Enterprise authentication (OAuth 2.0, MFA, RBAC).
- Monitoring and alerting (Grafana, OpenSearch, Prometheus / AlertManager).
- Infrastructure-as-code operations (Ansible) on Google Cloud Platform.



10. Results and Impact

Since migrating to the permissioned Avalanche L1, Lynq has operated with stable and predictable performance. Key outcomes include:

- Approximately 65% faster processing in key settlement workflows.
- Full state continuity: all positions, integrations, and workflows carried over without disruption.
- Production cutover completed in approximately 1 hour 49 minutes during a scheduled maintenance window.
- No settlement failures or material latency issues reported post-migration.
- Enhanced auditability and trust through on-chain visibility of governance changes
- Foundation established for interoperability with assets issued natively on the broader Avalanche network.

11. Partner Collaboration and Ecosystem Alignment

Tassat partnered closely with Ava Labs throughout the migration process. Ava Labs provided dedicated technical support, regular working sessions, a shared communication channel, early access to tooling, and engineering availability during the production cutover window.

Lynq's institutional ecosystem connects more than 30 leading digital asset firms, including B2C2, Crypto.com, FalconX, Fireblocks, Galaxy, and Wintermute, supporting live trade settlement, collateral, and treasury workflows.

12. Lessons Learned

The migration produced a set of institutional best practices applicable to any regulated operator considering a blockchain infrastructure transition.

1. Phased rollout discipline

Sequencing through dev/test, UAT, and production with defined go/no-go gates at each stage allowed the team to catch and resolve issues early, building organizational confidence before production cutover.

2. Monitoring-first approach

Investing in monitoring and automated alerting before migration, including validator AVAX balance tracking, ensured the team had full visibility from day one on the new chain. Operational surprises were minimized.

3. Privacy-aware data migration

Applying the state snapshot as a state upgrade rather than embedding it in the genesis file was a deliberate privacy decision. For regulated platforms handling sensitive financial data, migration mechanics must be evaluated through a privacy lens.

4. Multi-signature governance from the start

Deploying multi-signature controlled administrator contracts before the first validator was registered ensured that governance was auditable and tamper-resistant from the outset — not retrofitted after launch.

5. Partner engagement as a force multiplier

Active collaboration with Ava Labs, including weekly working sessions and a dedicated support channel, accelerated the team's learning curve and identified configuration optimizations that would have been difficult to discover independently.

6. Change management for institutional stakeholders

Clear, timely communication to institutional participants, including advance notice of the maintenance window and post-cutover confirmation, maintained trust and ensured a smooth transition for all counterparties.

13. Forward Roadmap

With Lynq operating on a permissioned Avalanche L1, Tassat is positioned to pursue capabilities that were difficult to achieve on a legacy private chain:

- Governed interoperability via Avalanche Interchain Messaging (ICM) enabling secure cross-chain settlement and data exchange with other Avalanche L1s and the C-Chain.
- Deeper integration with digital securities and treasury instruments issued natively on the Avalanche network.
- Privacy-enhancing initiatives, including protocols such as Encrypted ERC-20, that may enable more direct blockchain access for institutional users.
- Expanded collateral management and liquidity workflows leveraging the programmability and composability of the Avalanche ecosystem.

Appendix — References

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- Ava Labs — Etna: Enhancing the Sovereignty of Avalanche L1 Networks (Dec 2024)
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