XI'AN · HYPERSCALE FOR RADIX

WEEK 28 · 6 JUL 2026

6–12 Jul 2026

Hyperscale Weekly

Split the work, not the world

CURRENT MILESTONE

Milestone 1 · Adaptive Sharding

Teaching the network to split and merge its shards on its own

Week 11

Previously: flightofthefox had just closed the beacon's rare double-commit safety gap and proved the fix in five new formal models covering straddlers, cross-shard commit, and the dual commit itself.

This week the formal-proof work expanded dramatically: flightofthefox built a brand-new Quint model that walks the entire reshape lifecycle from start to finish. Alongside that, the validator shuffling got its first proper adversarial security analysis, and the simulator picked up a fresh batch of nasty network scenarios. Beacon and shard code keep getting tightened, with several pieces of safe-vote and ratification data now durably stored.

55	+13k −2.3k	158	34+
-33% vs last wk	-8% vs last wk		
COMMITS	LINES CHANGED	FILES TOUCHED	DAY COMMIT STREAK

COMMITS / DAY  peak 16/day · 6/7 days active

WHAT FLIGHTOFTHEFOX BUILT

Model F walks the full reshape story

flightofthefox built a new Quint model — 'Model F' — that proves the entire lifecycle of a shard split or merge: the merge path, the ready-signal hand-off, the draw-seed twins, and even the case of an unbound ready signal. This turns the reshape design promises into checkable math.

'see "The Proof" on hyperscale.rs

The Lottery gets adversarial testing

The validator-shuffling logic was put under a Monte Carlo microscope, with an adaptive worst-case attacker thrown in. Deviations were measured and recorded, so the random committee assignment now has a published security case rather than just hopeful claims.

'see "The Lottery" on hyperscale.rs

The Crash Lab grows new nightmares

Several fresh partition and Byzantine scenarios landed in the simulator — a beacon pool that stalls during a partition, inter-shard severance, fragment rejoin, exact-quorum heal, a slow proposer, and a stale parent. The Crash Lab now has more ways to break the network on purpose.

'see "The Crash Lab" on hyperscale.rs

THE BOTTOM LINE

STANDOUT CHANGE

A new Quint model now mechanically proves the entire reshape lifecycle — splits, merges, ready signals, and staffing — is safe under formal analysis.

WHAT'S NEXT

Likely next: the validator-shuffling logic gets the production-side wiring, now that the security math and simulator scenarios are landing.

Written by AI from public commits, the community chat and hyperscale.rs — may contain mistakes.

From the community

What people are saying, and the words behind the work.

HEARD IN THE CHAT

The mood: DAO and core-team chatter dominates the chat this week — who should run Radix, market-maker contracts expiring with no renewal in sight, and a small side thread about turning these weekly reports into

> *"finishing the roadmap is only conditional on the requisite fee being paid (and the coins themselves actually having liquid value). if the DAO keeps it's half of the bargain, then i'll keep mine."*
>
> — FLIGHTOFTHEFOX, IN THE COMMUNITY TELEGRAM

THIS WEEK'S CONCEPT

> **The Proof** — *Formal, mathematical verification.* Model F is the centerpiece of the week: a single Quint model that mechanizes the whole reshape story — splits, merges, ready signals, staffing — turning the design into provable math.
>
> hyperscale.rs/proof

JARGON, DECODED

Monte Carlo — A way of stress-testing something by running huge numbers of random trials and watching the patterns.

Byzantine — Describes a participant in a network that is deliberately misbehaving or sending lies.

Adaptive adversary — A worst-case attacker that watches what's happening and changes its strategy on the fly to do the most damage.

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ZOOM OUT

The bigger picture

Where the work landed, and the map to read along on hyperscale.rs.

MOMENTUM · LINES CHANGED / WEEK



last 8 weeks · newest right

THIS WEEK'S WORK



72% Rust · 12% Config · 12% Docs · 4% Specs

WHERE THE WORK LANDED

node · The Census
beacon ratification and safe-vote registers durably stored

shard · The Overlap
fork-safety storage, header scope, ready-signal dwell

simulation · The Crash Lab
new partition and Byzantine scenarios, harness cleanup

THE FULL PICTURE

The System
The whole sharded design at a glance.

The Journey
One transaction's trip through the network.

The Clock
Consensus-attested time across independent shards.

The Census
The leaderless beacon of validators, stake and shards.

The Overlap
Why two conflicting blocks can never both commit.

The Generals
All-or-nothing cross-shard commits, computed not voted.

The Archive
Every published byte is preserved or provably expired.

The Library
All state in one merkle tree; a shard is a subtree.

The Will
How in-flight transactions settle when a shard dies.

The Lottery
Random, ever-moving committees; proven cheats are jailed.

The Triage
Under overload, urgent traffic never waits for bulk.

The Governor
Validator entry is re-priced every epoch, like a market.

The Crash Lab
The simulator that replays any failure byte-for-byte.

The Proof
Proving safety with maths, not just tests.

The Asterisks
Every design's trade-offs — including Hyperscale's own.

THE ROAD TO MAINNET

M1	M2	M3	M4	M5	M6
Adaptive Sharding ~4 mo	Radix Engine ~5 mo	Gateway & API ~3 mo	Validator GUI ~3 mo	Migration ~3 mo	Live support 12 mo

Now: Milestone 1 · Adaptive Sharding — Week 11. Since day one: 2,342 commits — one developer, fully in public.

LINKS

WEBSITE
hyperscale.rs

DISCUSS THIS ISSUE ON X
x.com/i/status/2076583433392836886

CODE (PUBLIC)
github.com/hyperscalers/hyperscale-rs

MILESTONE PROPOSAL (PDF)
hyperscale.rs/xian_proposal.pdf

COMMUNITY (TELEGRAM)
t.me/hyperscale_rs

AUTHOR
flightofthefox

scan for hyperscale.rs

Questions? flightofthefox is always happy to discuss in the community Telegram — t.me/hyperscale_rs.

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