

AetherCompute Network (\$ACT)

Next-Generation Decentralized AI Compute & Web-Scale Data DePIN Infrastructure

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Whitepaper)

Token Ticker:
\$ACT

Standard: SPL / ERC-
20

[Institutional Technical
Paper](#)

TOTAL TOKEN SUPPLY

700,000,000

Fixed Hard Cap (\$ACT)

INITIAL CIRCULATING (TGE)

25.00%

175,000,000 \$ACT

TARGET INFERENCE COST

-68.5%

vs. Centralized AWS/GCP

01 EXECUTIVE SUMMARY & VISION

The exponential expansion of Large Language Models (LLMs) and Autonomous AI Agents has created an unprecedented deficit in global high-performance compute and high-integrity training data. Centralized cloud monoliths impose exorbitant cost markups (exceeding 300%), rigorous queue times, and geo-fenced anti-scraping walls.

AetherCompute Network (\$ACT) resolves this infrastructural bottleneck by deploying a highly scalable **DePIN (Decentralized Physical Infrastructure Network)** framework. By virtualizing global enterprise-grade idle GPUs (H100/A100/RTX4090) alongside residential edge-bandwidth nodes, AetherCompute provides an open, verifiable, and hyper-cost-effective execution layer for AI model inference, fine-tuning, and real-world web data ingestion.

02 MARKET STRUCTURAL BOTTLENECKS

Centralized Cloud Monopolies

- **Prohibitive Pricing:** Enterprise H100 rentals average \$4.50–\$5.50/hr with inflated GPU margin markups.
- **Data Attrition & Anti-Bot Walls:** LLM labs face severe web scraping IP blocks enforced by Cloudflare.
- **Opaque Execution:** Lack of cryptographic verification for third-party AI inference calls.

The AetherCompute Paradigm

- **Sub-Dollar Compute:** Aggregated datacenter & consumer GPUs deliver inference at \$1.20–\$1.60/hr.
- **Edge Bandwidth Scrape:** Distributed residential node IPs bypass anti-scraping restrictions seamlessly.
- **zkML Verification:** Zero-Knowledge proofs validate AI execution integrity on-chain.

Core Strategic Imperative

AetherCompute bridges Web2 enterprise AI demand with Web3 cryptographic settlement. All cloud rentals, data purchases, and agent micropayments are programmatically routed through the \$ACT protocol engine, generating sustained structural token demand.

03 SYSTEM ARCHITECTURE & TECHNICAL FOUNDATIONS

The AetherCompute stack operates via a modular, three-tier architecture engineered to handle ultra-low latency compute orchestration, cryptographic job verification, and distributed web data harvesting.

1. Heterogeneous GPU Cluster Virtualization (AetherCompute Orchestrator)

Utilizing a customized Ray-framework kernel, AetherCompute abstracts physically dispersed GPUs (enterprise datacenters + high-end consumer rigs) into a single virtual supercomputer.

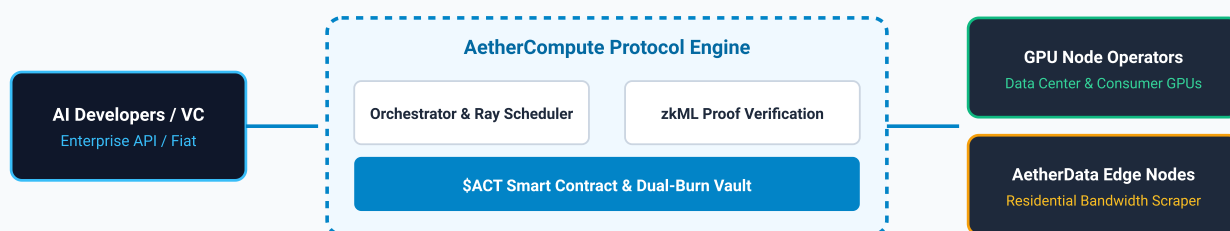
- **Dynamic Task Partitioning:** Automatically splits non-preemptive inference jobs and parameter-efficient fine-tuning (LoRA) tasks across heterogeneous clusters.
- **TEE Confidential Execution:** Enforces AMD SEV-SNP and NVIDIA TEE environments to ensure model weights and proprietary prompts remain encrypted during runtime.

2. AetherData Edge Scrape & Pipeline Processing Network

A decentralized residential IP network powered by lightweight edge nodes sharing underutilized bandwidth to collect and validate real-time web data for AI training.

- **Residential Proxy Traversal:** Bypasses anti-bot rate limits and geographical wall restrictions with high success rates (>98.4%).
- **On-Edge Data Cleaning:** Removes telemetry noise, deduplicates text, and reformats datasets directly at the edge prior to IPFS storage.

AetherCompute Technical Workflow & Settlement Layer



04 CRYPTOGRAPHIC VERIFICATION & PROOF-OF-USEFUL-WORK (POUW)

To eliminate malicious compute fraud (e.g., returning hallucinated or random noise outputs without running real inferences), AetherCompute utilizes **Optimistic Fraud Proofs** coupled with **Zero-Knowledge Machine Learning (zkML)** spot-check proofs. High-stakes enterprise workloads generate lightweight zk-SNARK execution trace certificates that are validated instantly on-chain before token escrow release.

05 TOKENOMICS & DISTRIBUTION MODEL

The \$ACT token is the native utility, staking, and governance token powering the AetherCompute ecosystem. The total supply is strictly capped at **700,000,000 \$ACT**.

Allocation Category	% of Total	Token Amount (\$ACT)	TGE Unlock %	Vesting Schedule & Lockup Terms
Strategic & Institutional Investors	17.50%	122,500,000	100.0%	70% of Initial Circulating. Full liquidity for Tier-1 VC backers.
Exchange Launchpad / IEO	7.50%	52,500,000	100.0%	30% of Initial Circulating. Exchange partner user allocation.
DePIN Mining & Node Rewards	40.00%	280,000,000	0.0%	10-Year decay schedule based on GPU work & bandwidth score.
Core Team & Key Contributors	15.00%	105,000,000	0.0%	12-Month Cliff, followed by 36-month linear monthly vesting.
Ecosystem Foundation & Reserve	12.00%	84,000,000	0.0%	6-Month Cliff, 48-month linear vesting for protocol upgrades.
R&D & Developer Grants	5.00%	35,000,000	0.0%	3-Month Cliff, 24-month linear vesting for ecosystem builders.
Liquidity Pool & Market Making	3.00%	21,000,000	100.0%	Managed for CEX/DEX initial market depth and pairing.
Total Supply	100.00%	700,000,000	25.00%	Initial Circulation: 175,000,000 \$ACT (25.00%)

Initial Circulation Mechanics Analysis (TGE = 25%)

The initial circulating supply at TGE is exactly **25.00% (175,000,000 \$ACT)**, specifically allocated to secure strong institutional backing and wide retail distribution through top-tier exchange partners:

- **Institutional Reserve (70% of TGE = 122.5M \$ACT):** Reserved for strategic VCs and institutional capital providers to anchor protocol liquidity and compute node scaling.
- **Exchange Launchpad / IEO (30% of TGE = 52.5M \$ACT):** Distributed directly to exchange users via IEO/Launchpad to foster immediate global decentralization.

06 VALUE CAPTURE & DUAL-BURN MECHANICS

1. B2B Payment Fuel & Staking

Enterprise clients pay for AI compute in USD/USDC. The protocol engine automatically routes 100% of non-fiat payments to purchase \$ACT on the open market. Node operators must stake \$ACT as slashable collateral to receive high-tier GPU jobs.

2. Deflationary Protocol Burn

20% of all protocol service fees are permanently burned on-chain. As enterprise AI inference volume grows, structural buy-pressure and token supply reduction create a perpetual economic flywheel for token holders.

07 STRATEGIC ROADMAP (2025 – 2027)

Phase 1: Network Genesis & TGE (Q1-Q2 2025)

- Mainnet Launch & \$ACT TGE across Tier-1 CEXs.
- Onboarding 10,000+ enterprise-grade GPUs (A100/H100).
- AetherData browser extension launch for edge bandwidth nodes.

Phase 2: zkML Integration & B2B Expansion (Q3-Q4 2025)

- Deployment of zk-SNARK spot-check verification engine.
- Enterprise SaaS gateway for seamless fiat USD compute billing.
- Expansion into Autonomous AI Agent micro-payment rails.

Phase 3: Subnet Marketplace & DePIN Scaling (2026)

- Launch of specialized Subnets (3D rendering, Biotech, LLMs).
- Cross-chain liquidity integration with Solana and Ethereum L2s.
- Targeting \$50M+ ARR in enterprise compute revenues.

Phase 4: Autonomous AGI Infrastructure (2027+)

- Fully decentralized governance transition (AetherDAO).
- Zero-latency edge inference for robotics & spatial computing.
- Global multi-datacenter federation via native PoUW.

08 RISK MANAGEMENT & SECURITY GOVERNANCE

Smart Contract & TEE Security

All core settlement contracts undergo dual independent audits by CertiK and Trail of Bits. Node TEE enclaves are monitored continuously via automated remote attestation protocols.

Slashing & Malicious Node Mitigation

Nodes submitting corrupted training outputs or failing SLA availability thresholds (<99.5% uptime) automatically forfeit up to 100% of their staked \$ACT collateral to the protocol treasury.

AetherCompute Foundation

Building Decentralized Intelligence for the Open Web

Contact: research@aethercompute.io
Official Portal: <https://aethercompute.io>