

UNPChain

A self-hosted blockchain platform · PoA → PoS → APOS

Complete Operator's Guide

Everything you need to set up the chain, run a node, list tokens, and buy on the marketplace — with annotated screenshots of every panel.

Audience: Admin · Node Operator · Token / Contract Owner · Marketplace User

Live demo network used for the screenshots in this guide:

Admin node — <http://72.144.161.171:3000/>

Operator node — <https://node1.unpchain.com>

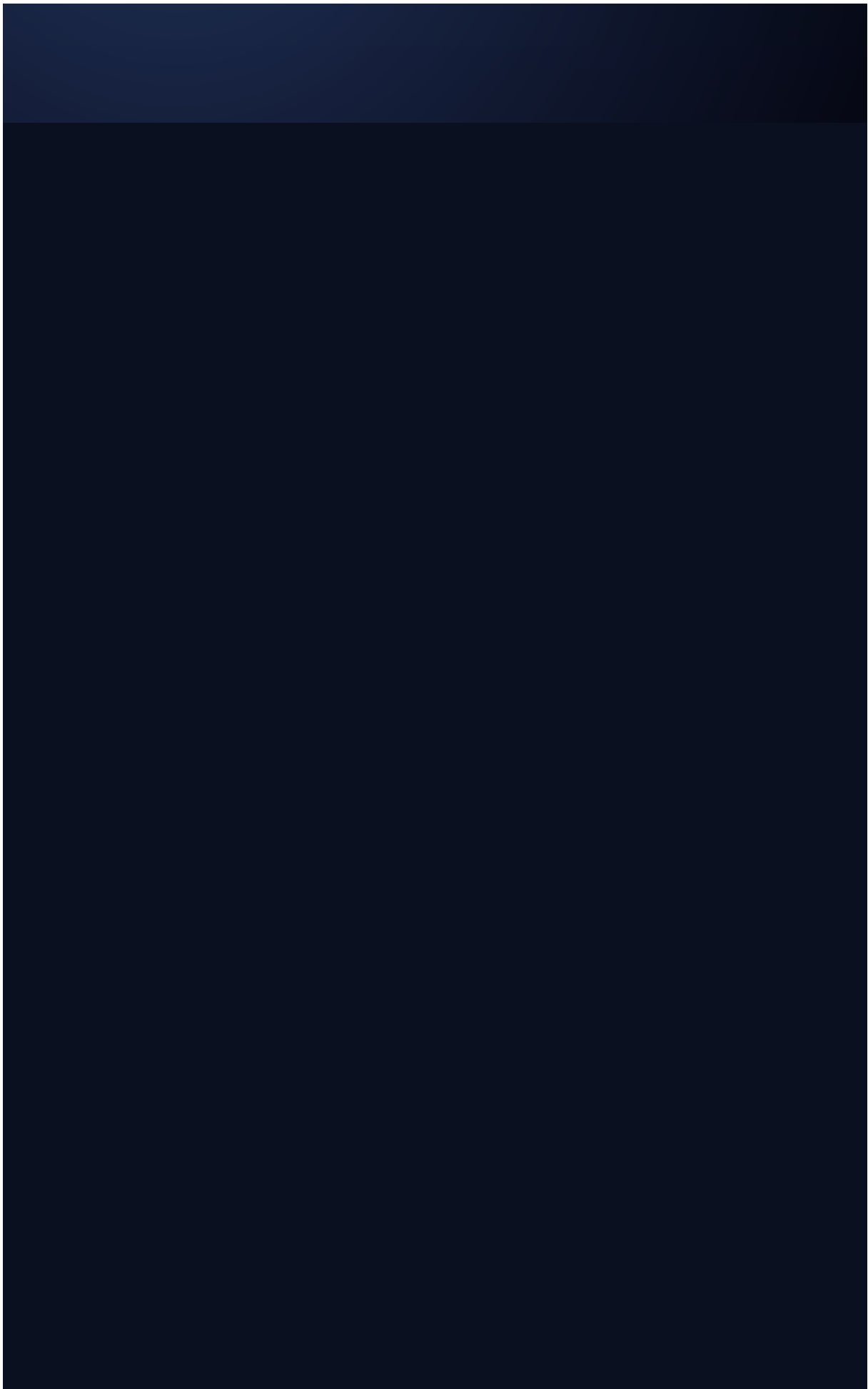


Table of Contents

- 01 Introduction — what UNPChain is & the four roles
- 02 Architecture — PoA → PoS → APOS, fee splits, the registry
- 03 Setup & conversion walkthrough — create a chain, sync, convert
- 04 Admin Guide — every panel tab with annotated screenshots
- 05 Node Operator / RPC Guide — apply, earn, withdraw on day 15
- 06 Contract & Token Owner Guide — register, list, withdraw
- 07 User Guide — browsing & buying tokens on the marketplace
- 08 Reference — addresses, errors, troubleshooting

How to use this guide

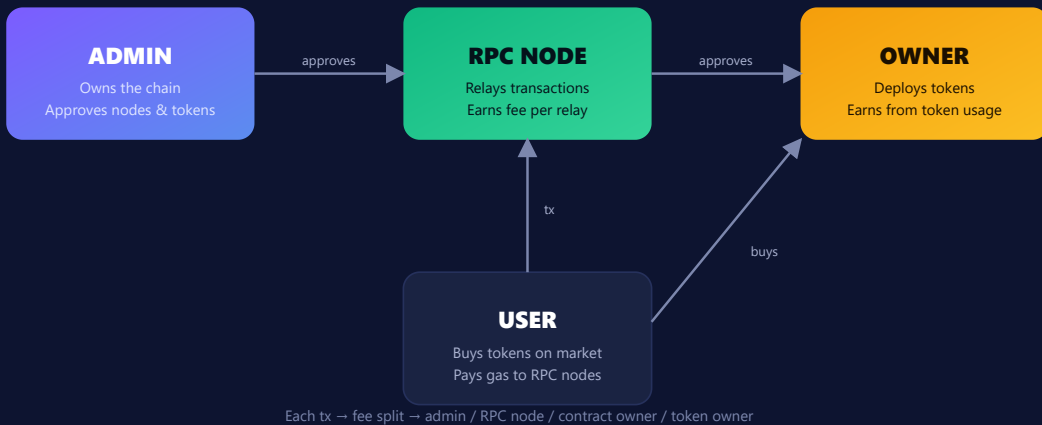
Each role gets its own chapter. Within a chapter, every tab of the panel is shown as a screenshot followed by a numbered walkthrough. **Cross-chapter cross-references are live** — if a step on the operator side requires an admin to approve, you'll see a pointer to the admin chapter.

01

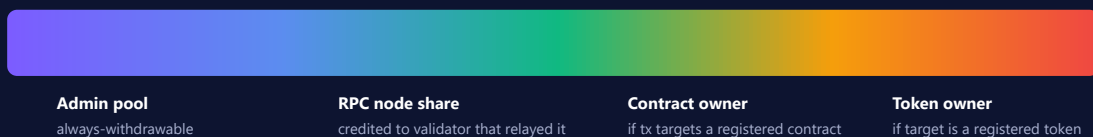
Introduction

UNPChain is an EVM-compatible self-hosted blockchain with a built-in fee-distribution registry. Anyone can run a node, deploy a token, and earn a share of the transaction fees their node, contract, or token generated.

The four roles in one diagram



Where the money goes — every transaction's fee



Withdraws happen on day 15 of the chain calendar (admin-configurable)

— except admin pool which is always claimable —

What you don't have to think about

Block production, peer discovery, gas accounting, and signing are handled for you. As an operator, your job is just to **run the node, apply via the panel, wait for admin approval, and withdraw on day 15**. As an owner, your job is to **register a contract or deploy a token, get approved, and let traffic generate fees**.

One stake, two revenue streams

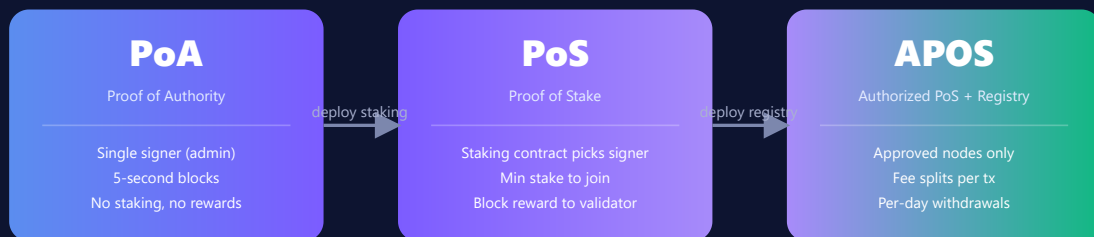
If you've already staked UNP into one of the staking packages (any package — pick whichever APR / lock-period suits you), **that same stake counts as your eligibility stake for becoming a node, contract owner, or token owner**. You earn the package APR *and* the registry fee share on top. You only need to put up extra UNP if you don't already have a qualifying package position. Both apply forms (operator portal & owner portal) expose this with a simple radio toggle.

02

Architecture

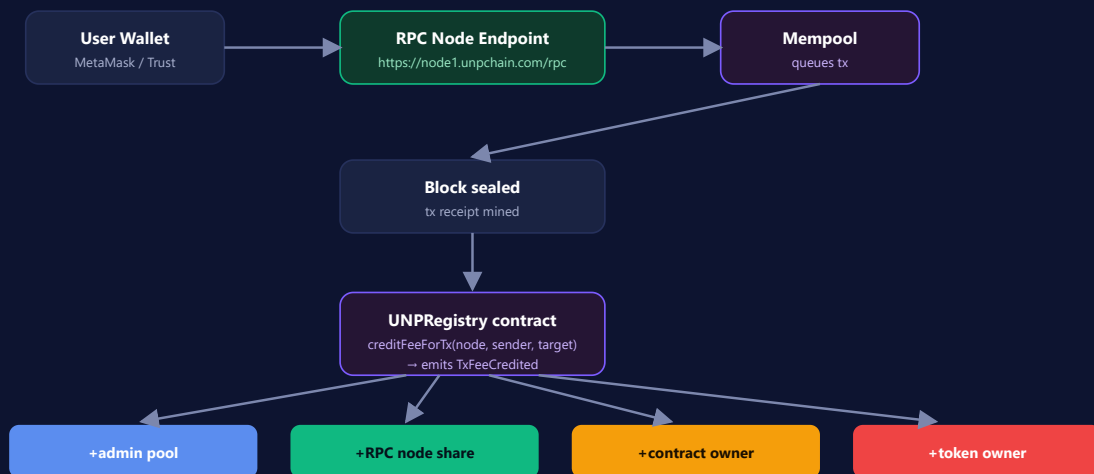
UNPChain runs on three consensus modes that you migrate between. You start in PoA (one signer), promote to PoS (a staking contract picks signers by balance), then turn on APOS (the fee-distribution registry). Each step is a button in the panel.

The three consensus modes



Each upgrade is a one-click action in the admin panel - No hard fork - No re-sync

Anatomy of a transaction in APOS mode



The dashboard's RPC proxy tags each tx with the validator that received it; the worker process listens for new blocks and credits the right wallet on the registry.

The Pointer contract — making upgrades survivable AND forced

One canonical pointer per chain — auto-discovered, not user-set

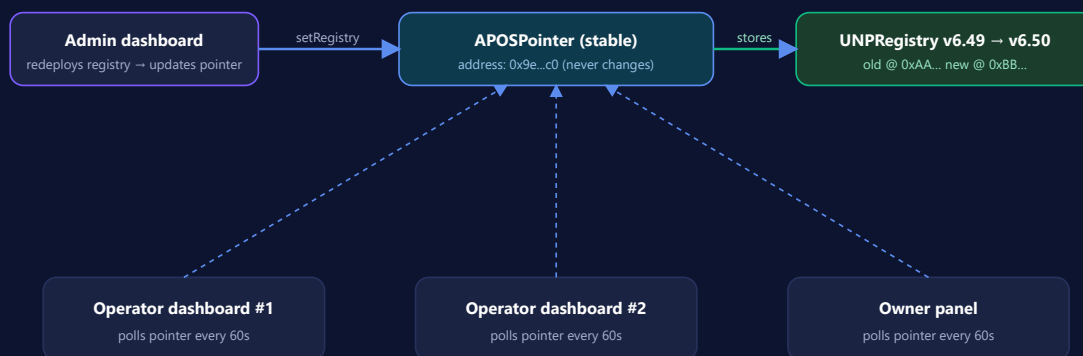
The registry contract may change over time (every contract upgrade requires a fresh deployment). To make upgrades safe AND consistent, admin deploys a tiny **APOSPointer** contract once per chain. The pointer's `registry` field stores the current registry's address; admin can update it as the chain evolves.

The pointer is canonical, not optional. Every node on the chain independently scans the chain logs (filtering by `AdminAssigned(admin)` events emitted by APOSPointer constructors) and adopts the EARLIEST pointer deployed by the chain admin. Operators do *not* paste pointer addresses; they cannot stay on a stale registry. When admin updates the pointer to a new registry, every operator's fee-worker re-reads the pointer at most 60 seconds later and routes new transaction fees to the new registry.

What happens to the old registry on upgrade

Old registries remain on-chain forever — Ethereum contracts can't be deleted. But once the pointer flips to a new registry:

- **Block-producer nodes stop sending fees to it.** All new transaction fees go to the new registry only.
- **The old registry becomes a read-only "savings account."** If a user has leftover accumulated fees or stake on it, they can still call `withdrawNodeFees` / `withdrawContractFees` / `withdrawTokenFees` / `withdrawNodeStake` / `withdrawPackageStake` on the old contract directly via MetaMask to pull their UNP out.
- **Approvals do not carry over.** Approved nodes / contracts / tokens on the old registry must re-apply on the new one to keep earning.



All operators read the pointer; the pointer reads the current registry. Single source of truth.

03

Setup & Conversion

Three buttons take a fresh chain from "nothing exists" to "tokens earning fees". This chapter walks each one — what it does, what it costs, what to verify before clicking.

Stage 1 — Create a fresh PoA chain (admin)

1 Open the admin URL on a fresh server

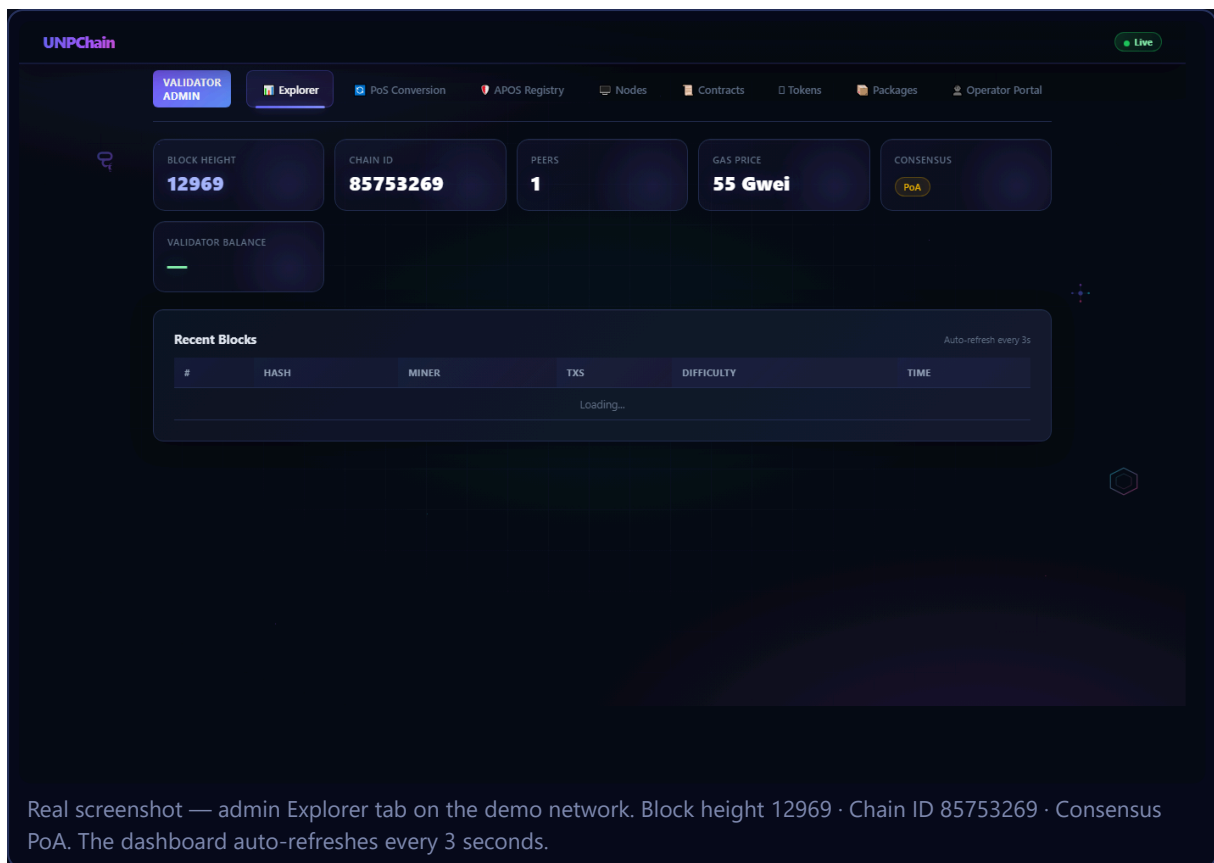
First-time visit shows the create-chain form — chain name, chain ID, period (block time), and the admin password you'll use to log in. Default block period is 5 seconds. The chain ID becomes the EVM identifier MetaMask uses.

2 A single validator key is created

The panel generates the admin wallet, funds it with the genesis allocation, and writes the chainspec. The node starts producing blocks immediately. You're now in **PoA mode** — one signer, no rewards, no fees yet.

3 Verify in the Explorer tab

Block height should be ticking up every 5 seconds. Consensus badge reads **PoA**. `Validator Balance` shows your starter allocation (typically 1,000,000 UNP).



Stage 2 — Sync a second admin node (optional, for HA)

If you want a backup node so the chain keeps producing blocks when your primary is down, install the same dashboard on a second server, point it at your primary's RPC (it joins as a peer), and import the same validator key. You can run as many synced peers as you like; only the keyholder seals.

Stage 3 — Convert PoA → PoS (admin)

1 Open ⚡ PoS Conversion

Pick the conversion block (typically current + 100), set `MIN_STAKE` (default 1,000 UNP), and click **Deploy Staking Contract**.

2 Stake yourself as the first validator

A second button on the same tab signs `stake(...)` with the admin wallet. From the conversion block onward, only staked validators can seal blocks — but you've already added yourself, so production is uninterrupted.

Stage 4 — Deploy the APOS Pointer (admin, once per chain)

1 Open ⚡ APOS Registry → Deploy Pointer

The pointer is a tiny contract that stores the current registry's address and is updatable by admin only. Deploying it makes future registry upgrades survivable for the whole chain — operators don't need to do anything when you redeploy.

2 Operators auto-discover — no manual setup needed

Each operator dashboard scans the chain logs on startup (and every 5 min) for the canonical pointer — the earliest APOSPointer deployed by the chain admin. They adopt it automatically. There is no "paste this address" step; if you tried to deploy a competing second pointer, the dashboard would refuse and adopt the first one instead.

Stage 5 — Deploy APOS Registry (admin)

1 Open ⚡ APOS Registry → Deploy

The dashboard compiles the registry, sends a deployment tx, and writes the contract address into the chain config. After it confirms, the panel unlocks the ⚡ Nodes , ⚡ Contracts , ⚡ Tokens , and ⚡ Packages tabs.

2 Configure fee policy

Set the per-tx flat fee (default 0.0005 UNP), the min-balance to send (anti-spam), and the four fee shares (admin / node / contract / token in basis points — typically 1000/3000/3000/3000 = 10/30/30/30%).

3 Add yourself as the first APPROVED node

In the Nodes tab, paste your validator address and click **Approve**. Now every transaction that comes through your RPC proxy will start crediting you.

Done — your chain is live in APOS mode

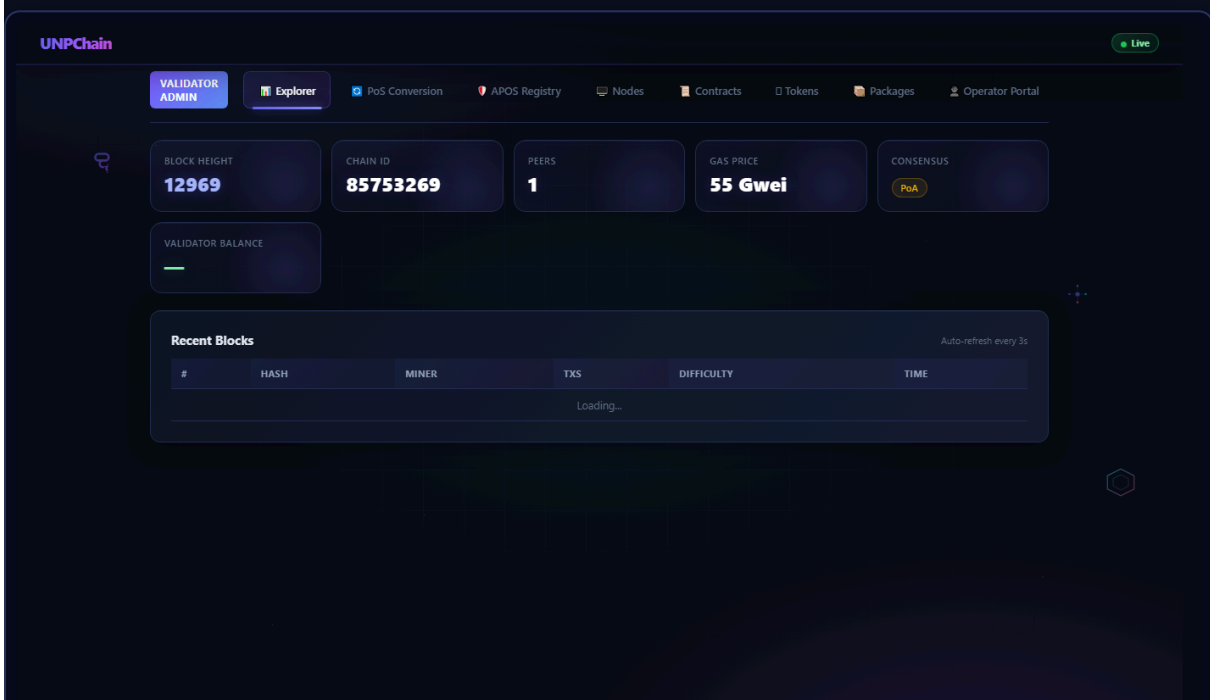
You can now invite operators (chapter 05), accept token owners (chapter 06), and route users to the marketplace (chapter 07).

04

Admin Guide

The admin panel has 14 tabs. This chapter walks each one with an annotated layout, what to use it for, and the most common gotchas.

The full admin nav (post-APOS)



Real admin panel — top nav highlights the role badge **VALIDATOR ADMIN**. Admin gets every tab: Explorer, PoS Conversion, APOS Registry, Nodes, Contracts, Tokens, Packages, Operator Portal, Staking, Fees, All Credits, Settings, Network, Send UNP.

Tab	Use it to	Visible to
Explorer	Live block height, peers, recent blocks, validator balance	Admin, Operator
PoS Conversion	One-time PoA→PoS migration, staking-contract deploy	Admin only
APOS Registry	Deploy registry & pointer, set fee policy, set min-balance, redeploy on upgrade	Admin only
Nodes	Approve / reject / suspend RPC node applicants	Admin only

 Contracts	Approve / reject contract-owner applicants	Admin only
 Tokens	Approve / reject token-owner applicants	Admin only
 Packages	Create staking packages (lock UNP for fixed APR)	Admin only
 Operator Portal	Same view operators see — useful for testing	All
 Staking	Adjust min-stake, view active validators	All
 Fees	Withdraw admin pool · view earnings	All
 All Credits	Every TxFeeCredited event with per-node leaderboard	Admin only
 Settings	Min gas price, block period, validator min-stake, change password	Admin only
 Network	Chain ID, RPC URL, peer list, listening status	All
 Send UNP	Native transfer between any two addresses	All

Explorer tab

Live status of the chain. Every panel auto-refreshes every 3 seconds.

The screenshot shows the UNPChain Explorer interface. At the top, there's a navigation bar with 'UNPChain' and a 'Live' indicator. Below that, a menu includes 'VALIDATOR ADMIN', 'Explorer', 'PoS Conversion', 'APOS Registry', 'Nodes', 'Contracts', 'Tokens', 'Packages', and 'Operator Portal'. The main area features six stat cards: 'BLOCK HEIGHT' (12969), 'CHAIN ID' (85753269), 'PEERS' (1), 'GAS PRICE' (55 Gwei), 'CONSENSUS' (PoA), and 'VALIDATOR BALANCE'. Below these is a 'Recent Blocks' table with columns for '#', 'HASH', 'MINER', 'TXS', 'DIFFICULTY', and 'TIME'. The table is currently loading. A 'Real screenshot' caption is at the bottom of the image area.

- **Block Height** — should be incrementing every `blockPeriod` seconds (default 5s). If it freezes, your validator probably ran out of UNP — top up via Send UNP.
- **Chain ID** — paste this into MetaMask when adding the network. It's also what wallets check for replay protection.
- **Peers** — usually 0 on a single-server install; rises as you add operators.
- **Gas Price** — current min gas. Adjustable in Settings.
- **Consensus** — PoA , PoS , or APOS . The badge color shifts as you progress.
- **Validator Balance** — your sealer wallet's native balance.

PoS Conversion tab

PoA → PoS Conversion (one-shot)

Visible only when chain is in PoA mode. Disappears after conversion succeeds.

CONVERSION BLOCK

13100

MIN STAKE (UNP)

1000

Deploy Staking Contract

Auto-stake admin (after deploy)

The deployment tx funds the staking contract with the admin's stake; from the conversion block forward, the chainspec switches to PoS rules and only the contract's `activeValidators()` can seal blocks. Existing blocks are unchanged — no re-sync needed.

APOS Registry tab

APOS Registry — fee distribution

Deploy once, then tune fee splits and per-tx fee.

REGISTRY ADDRESS

0xAbC1...2eF9

TX FEE

0.0005 UNP

WITHDRAWAL DAY

15 of 30

Recipient	BPS	%
Admin pool	1000	10%
RPC node	3000	30%
Contract owner	3000	30%
Token owner	3000	30%

Save Fee Policy

Nodes tab

Where you approve, reject, or suspend RPC node applicants. **This is the gate** — until you approve a node, nothing it relays earns anything.

Pending node applications

Address	Stake	Submitted	Status	Action
0x1234...aBcD	10 UNP	2026-04-30	PENDING	<p>Approve</p> <p>Reject</p>
0xb0bA...1337	10 UNP	2026-04-30	ACTIVE	<p>Suspend</p>

Approval is reversible — almost

You can suspend a node at any time (it stops earning the next block). Suspended nodes can re-apply. Rejected nodes get their stake back automatically.

Contracts & Tokens tabs

Mirror of the Nodes tab but for contract-owner and token-owner applicants. Same approve / reject buttons.

Contracts

Owner	Contract	Status
0xAa...1	0xC3...d	PENDING

Tokens

Symbol	Name	Status
PAB	Pandabuck	ACTIVE



Packages tab

Create time-locked staking products — users lock UNP for N days at a fixed APR. The dashboard handles unlock countdowns and reward accrual. **No default packages exist** — admin adds whatever set of products they want; the catalogue is empty until admin populates it.

Create new package

NAME	LOCK DAYS	APR (BPS)
"30-day Plus"	30	1200 (= 12%)

Allow early withdrawal (forfeits APR)

If checked, users can pull principal before the lock expires — they just don't earn the APR. If unchecked, principal is fully locked until unlock day.

Add Package

Two flavours of "package"

Locked-only (default — checkbox off): rigid term, principal cannot move until the lock day. Pays full APR on withdraw. Best for predictable yield products.

Early-exit allowed (checkbox on): user may withdraw principal at any time. If they pull early, the contract returns just the principal — no APR. Best for "savings account"-style products where flexibility matters more than yield certainty.



All Credits tab (admin)

Every `TxFeeCredited` event in the chain — useful for auditing fee distribution and seeing who's earning what. **Filter by validator** to focus on one node, or scroll the per-node leaderboard.

Per-Node Earnings (last 5000 blocks)

#	Validator	Txs relayed	Earned
1	0x1234...aBcD	1,402	2.106 UNP
2	0xb0bA...1337	318	0.477 UNP

Settings tab

Operational knobs you'll rarely touch.

Fees & Gas

- **Minimum Gas Price (Gwei)** — txs below this are rejected by mempool
- **Block Period (seconds)** — chainspec target, applied on next start

Validator Min Stake

- Updates `MIN_STAKE` on the staking contract
- Existing validators stay active; only new joiners must meet the new floor

Network tab

The "share these with someone joining" tab. Chain ID, RPC URL, peer list, listening status. Operators copy this when adding the network to MetaMask.

Send UNP tab

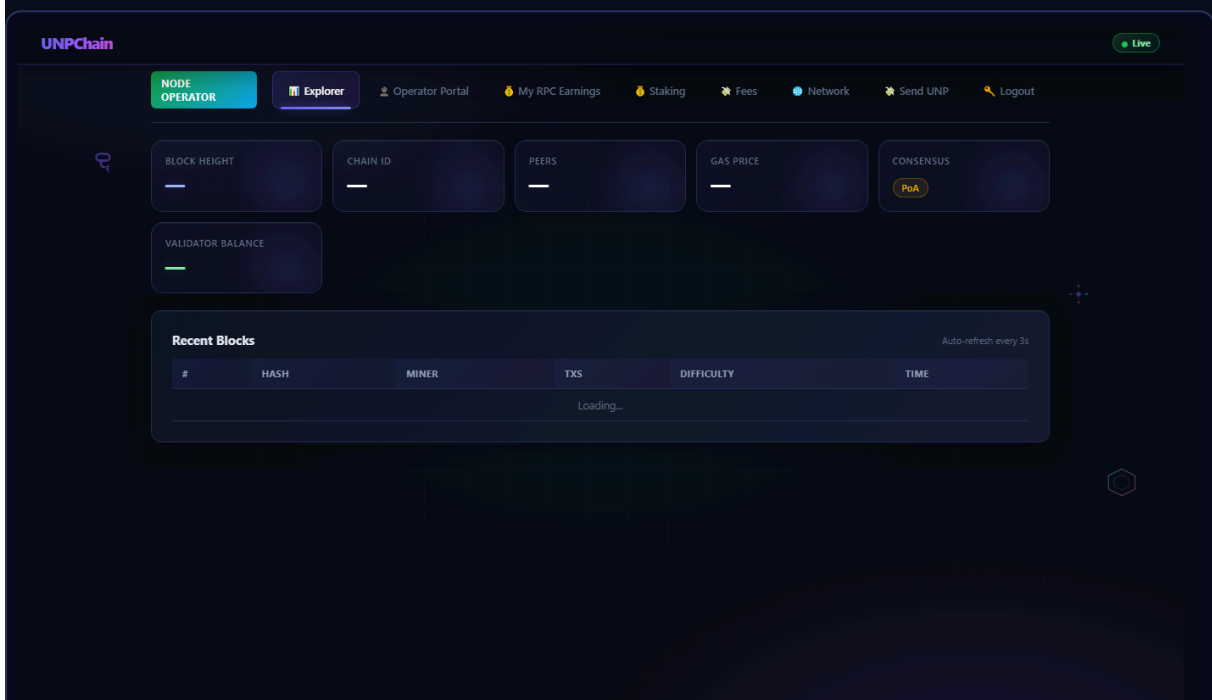
Sign a native UNP transfer with the admin wallet. Useful for funding new operators or topping up the validator balance.

05

Node Operator / RPC Guide

How to spin up a second node, get approved by admin, and start earning a share of every transaction your RPC relays. Includes day-15 withdrawal walkthrough.

What an operator's panel looks like



Real operator view — role badge reads **NODE OPERATOR**. Admin-only tabs (PoS, APOS, Nodes, Contracts, Tokens, Packages, Settings) are hidden. The **My RPC Earnings** tab is the operator's main tool.

Eligibility — you must hold an active staking-package position

One stake. Two reward streams. No second deposit.

Every applicant — node operator, contract owner, token owner — must first stake UNP into one of admin's defined staking packages. That same staking position then qualifies them when they apply: **no separate registry stake exists**. The amount must meet the role's minimum (`minNodeStake` , `minContractStake` , or `minTokenStake` — defaults 10/5/5 UNP). The package keeps earning its APR untouched while you also collect transaction-fee shares.

If you have no eligible package position when you open the apply form, the dashboard explains exactly what to do — stake into a package via the operator portal's "Stake in a Package" card (or the owner portal's, if you're a contract/token owner), then return and pick that position.

OLD: Two separate stakes

Package stake
earns APR

Node stake
earns tx fees

2× capital required
two separate locks to think about

NEW: One stake, both rewards

Single package stake
earns APR + qualifies as node

1× capital, 2× revenue stream
simpler accounting

End-to-end walkthrough

1

Spin up your dashboard

Same docker image as admin: `marcotrip/aposunpchain:latest` . On the first-time form, choose "Join existing chain" and paste the chain ID + the admin's RPC URL as a peer.

2

Set up your domain & HTTPS

Point a subdomain at your server (e.g. `node1.unpchain.com`) and toggle the **Auto-HTTPS** setting. The built-in Caddy fetches a Let's Encrypt cert automatically. You'll then route MetaMask traffic to `https://<domain>/rpc` .

3

Connect MetaMask in the Operator Portal

Click **Connect MetaMask** in the Operator Portal tab. The portal auto-adds the network if needed (with the correct `https://<domain>/rpc` URL).

4

Stake into one of admin's packages

Open the "Stake in a Package" form lower on the Operator Portal. Pick any active package admin has defined. Stake at least `minNodeStake` UNP (default 10). The position immediately starts earning APR.

5


Apply as an RPC node — point at your package position

Scroll back up to the "Apply as RPC Node" card. The "Which of my package stakes?" dropdown lists every staking position you own; pick the one \geq `minNodeStake` . Click **Submit Node Application**. MetaMask signs `applyAsNodeViaPackage(pubKey, stakeIdx)` with zero value — your package stays staked and keeps earning APR. Status flips to **PENDING APPROVAL**.

5 Wait for admin approval

Admin sees you in their Nodes tab (chapter 04). Once they click **Approve**, your status flips to **ACTIVE** and credits start flowing on every relayed tx.

6 Watch credits roll in

Switch to  **My RPC Earnings**. Every transaction that hit your RPC has its fee logged with your share. The header shows window totals.

7 Withdraw on day 15

The same tab has a **Withdraw RPC Node Fees** card. Off-day, the button is greyed and shows a countdown. On day 15 it lights up green; click it once and your accumulated balance lands in your wallet.

The Operator Portal tab — annotated


Operator Portal — what each card does

Card	Purpose
Connection	MetaMask connect / private-key unlock — sets your wallet for the rest of the page
My APOS Status	Shows NOT REGISTERED / PENDING / ACTIVE / REJECTED for your wallet
My APOS Earnings	Total accumulated fees split by node / contract / token bucket
My Transactions	Every tx sent FROM or TO your wallet in the last N blocks
Apply as RPC Node	Form that signs the <code>applyAsNode</code> tx
Child Node	Apply to a parent node as their child — inherits stake, no admin needed
Apply as Contract Owner	Register one of your contracts
Apply as Token Owner	Register one of your tokens (or use the dashboard's create-token form)
Stake in Package	Lock UNP into a fixed-APR package
My Package Stakes	Active package positions with unlock countdown and reward accrual

The My RPC Earnings tab — what you see

Withdraw RPC Node Fees

Pull-payment, day-restricted (anti-flash-drain).

 **Today is withdrawal day (chain day 15 of 30).** Window closes in **11h 24m**.

Withdrawable: 2.106 UNP

Withdraw Node Fees

My RPC Credit History

Every tx I relayed and what I earned

1,402 txs relayed in window · **You earned: 2.106 UNP** (out of 7.020 UNP total fees)

Block	Tx	Sender	Target	Fee	My share
13041	0x84c2...fa	0xbobA...	PAB	0.0005	0.00015
13039	0x91d3...cc	0xa11c...	PAB	0.0005	0.00015
13037	0x77a1...03	0xc4r0...	—	0.0005	0.00015

Child node — earn without stake-from-zero

What is a child node?

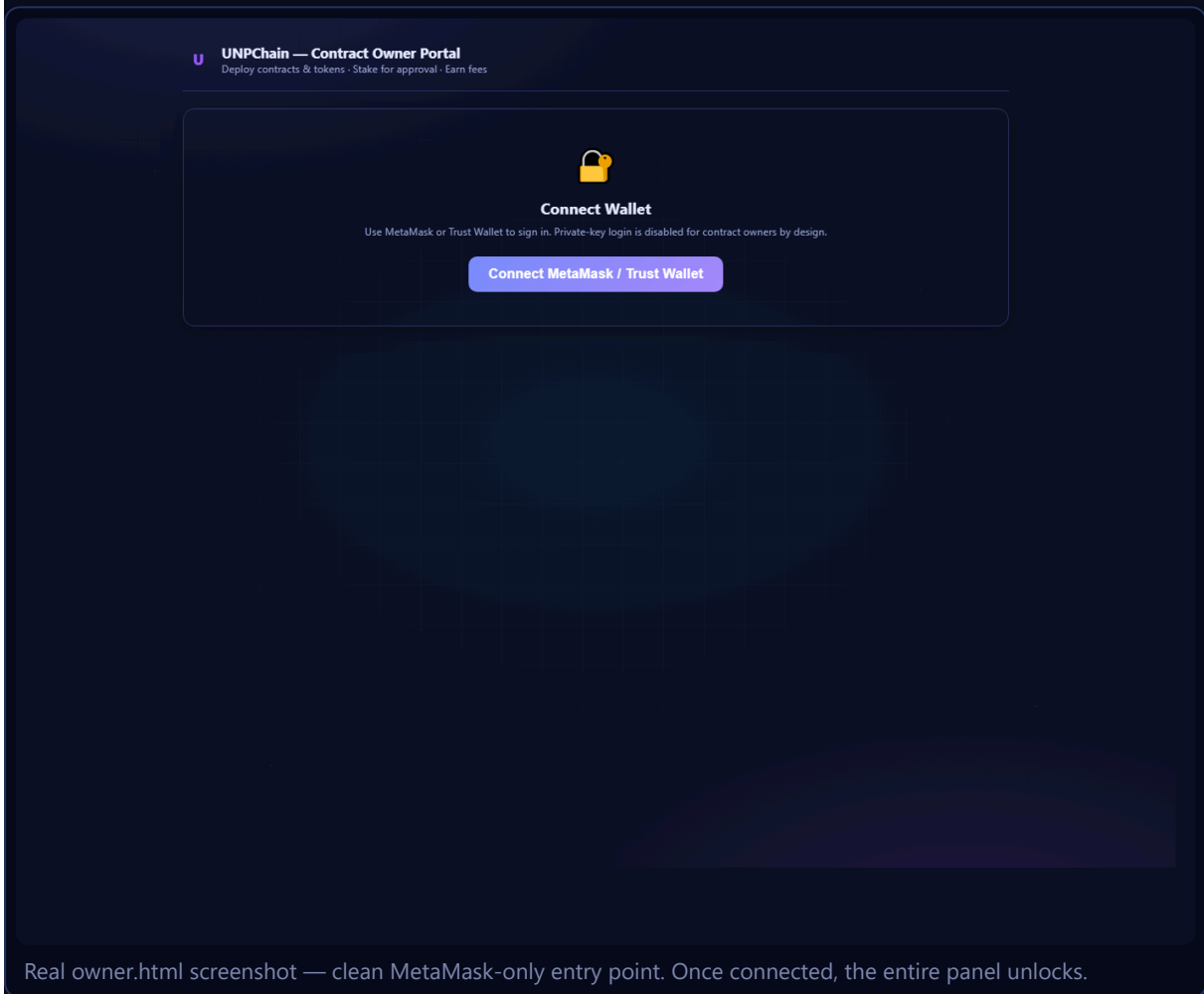
An ACTIVE parent node can vouch for ONE child. The child puts up its own stake (at least `minNodeStake`) and the parent's existing fee slice is split between them at a ratio the parent picks. **No admin approval needed** — the parent's vouch is sufficient. Useful when you trust someone to run a backup RPC for you and want to share the take.

06

Contract & Token Owner Guide

How to deploy a token in three clicks, register a contract you've already deployed elsewhere, and pull accumulated fees on day 15. The owner portal is MetaMask-only — no private-key login by design.

The owner login screen



Real owner.html screenshot — clean MetaMask-only entry point. Once connected, the entire panel unlocks.

What the panel looks like after connecting

Your On-Chain Identity

WALLET
0xAa3e...f902

UNP BALANCE
142.6710

MY TOKENS
1

My APOS Earnings

✔ Today is withdrawal day (chain day 15 of 30). Window closes in 11h 24m.

0.480000 UNP total earned (claimable on day 15) · As contract owner: 0.000000 · As token owner: 0.480000

Symbol	Name	Status	Fee	Earned	
PAB	Pandabuck	ACTIVE	30%	0.480000 UNP	

Eligibility — owners must also hold a staking-package position

The Owner Portal has its own "Stake in a Package" card

Every contract / token registration must point at an existing staking-package position the wallet owns — there is no fresh-stake path. Owner Portal includes its own "Stake in a Package" form so you don't need to bounce to the operator panel: pick a package, set the amount, click Stake. The position then appears in both apply forms below.

Deploying a new token end-to-end

1 Stake in a Package (one-time, if you haven't yet)

In the "Stake in a Package" card on Owner Portal, pick a package admin has defined and stake at least `minTokenStake` UNP (default 5). MetaMask signs `stakeInPackage(packageId)`.

2 Open "Create A New Token"

Fill name, symbol (uppercase), supply, price-per-token in UNP. The "Which of my package stakes?" dropdown shows your eligible positions. Click **Deploy + Register Token**.

3 MetaMask signs two txs in sequence

First the ERC-20 deploy, then `applyAsTokenViaPackage(addr, name, symbol, price, stakeIdx)` with zero value. Status reads PENDING.

4 Admin approves in their Tokens tab

Status flips to ACTIVE. The token now appears on the public marketplace and earns its share of every buy.

Registering a contract you already deployed

Same flow as token: stake into a package first, then in "Register A New Smart Contract" provide the contract address and pick which package position to point at. The fee share kicks in for any tx whose `to` is your contract — for the lifetime of your package position (or until you withdraw it from the package).

Withdraw flow (day 15)

1 Banner turns green

"✔ Today is withdrawal day" — every  **Withdraw** button in the contracts and tokens tables lights up.

2 Click Withdraw next to each row

MetaMask pops with `withdrawTokenFees(addr)` or `withdrawContractFees(addr)`. Sign. The fee balance lands as native UNP in your wallet.

3 Refresh — accumulated balance resets to 0

Day 15 has 24 hours, then locks again until next month's day 15. **Off-day attempts revert** with "UNP: not withdrawal day".

Credit History — see who's been buying

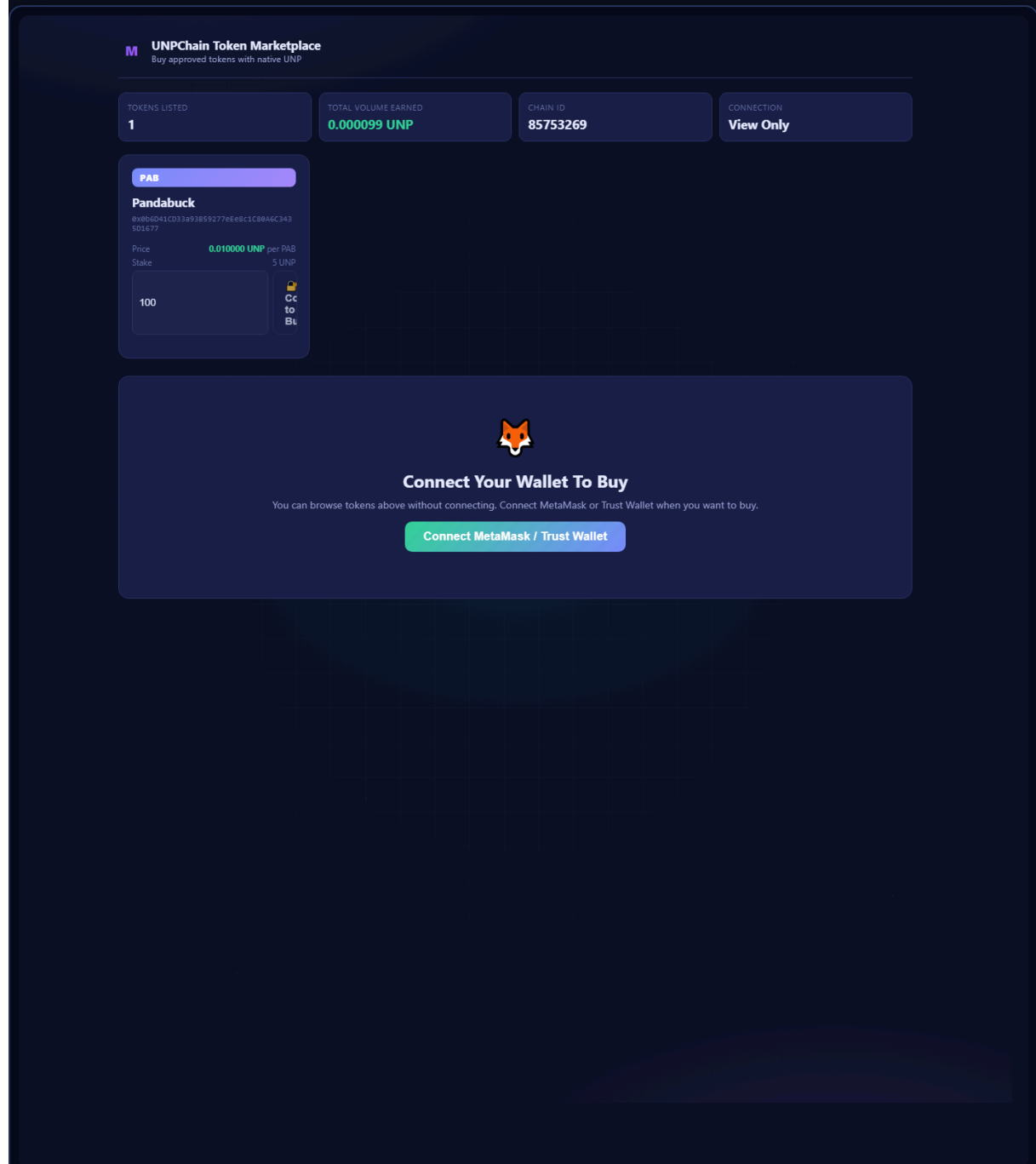
The "My Credit History" card lists every `TxFeeCredited` event where the target was one of your contracts or tokens. Block, tx hash, sender, fee, and your share. Useful for spotting whales or auditing earnings.

07

Marketplace User Guide

How to browse the available tokens, connect a wallet, and buy with native UNP. The marketplace shows token listings to anyone (no login needed) — connecting is only required at purchase time.

The live marketplace



Real marketplace screenshot — the top stat bar shows "Tokens listed", "Total volume earned", "Chain ID", and connection status. Each token card has the symbol, name, contract address, price, owner stake, and a quick-buy field.

Three-click purchase flow

1 Find the token you want

Browse the grid. Each card shows symbol, name, address, price-per-token, and the owner's stake. The "Connection" stat at the top reads **View Only** until you connect a wallet.

2 Type the number of tokens you want


As you type, the panel computes = X UNP (cost) live below the input. If your balance is too low, the box turns red and the buy button stays disabled.

3

Click Buy → MetaMask pops

The dashboard signs `buy(uint256 amount)` on the token contract with `value = amount × price`. After confirmation, the tokens appear in the "My Holding" column on every card; native UNP is deducted from your balance.

Common UX gotchas

- **"Could not coalesce error"** in MetaMask — this is a stale RPC URL in your network config. Use the orange  **Fix MetaMask Network** button at the top of the owner panel; the same exists in the marketplace.
- **Balance shows "—"** after connect — the dashboard's RPC fallback hasn't kicked in yet; wait 2 seconds and refresh.
- **"insufficient funds for gas"** — you need a tiny bit of UNP for gas in addition to the buy value. Top up via the admin's Send UNP tab or any operator's Send UNP tab.

What happens to your buy fee?

Every buy pays the registry's per-tx fee (default 0.0005 UNP) on top of gas. That fee is split as shown in the Architecture chapter: 10% admin, 30% the RPC node that relayed your tx, 30% to the contract owner (the token), 30% to the token owner. Your gas — separate from the fee — goes entirely to the validator that sealed the block.

08

Reference

Common commands, error messages, troubleshooting checklists.

Common error messages — what they mean & how to fix

Error	Where you see it	Fix
<code>UNP: not withdrawal day</code>	MetaMask popup on Withdraw click	Wait until chain day 15 — your panel's countdown shows when. Off-day, the button should already be greyed.
<code>UNP: zero</code>	MetaMask popup on Withdraw click	Nothing accrued in the relevant bucket. Check the earnings panel — the right number should be > 0 .
<code>UNP: not approved</code>	Apply / Withdraw flows	Admin hasn't approved your application. Check status in the Operator Portal.
<code>could not coalesce error</code>	MetaMask buy/transfer popup	Stale RPC URL. Click the Fix MetaMask Network button in any panel.
<code>Pruned history unavailable</code>	Receipt polling	The dashboard auto-falls-back to its own /rpc endpoint, so the tx usually succeeded. Refresh.
<code>insufficient funds for gas</code>	Any send	You need native UNP for gas. Get a small allocation from the admin's Send UNP tab.

Day-15 cheat sheet

Chain calendar — withdrawals are open ONLY on the green slot



"day" = $\text{floor}(\text{unix} / 86400) \% 30 + 1$ — the contract's calculation, mirrored client-side for the countdown UI

Tab-to-role visibility matrix

Tab	Admin	Operator	Owner	Public user
Explorer	✓	✓	—	—
PoS Conversion	✓	—	—	—
APOS Registry	✓	—	—	—

Nodes / Contracts / Tokens / Packages	✓	—	—	—
Operator Portal	✓	✓	—	—
💰 My RPC Earnings	✓	✓	—	—
Staking / Fees	✓	✓	—	—
All Credits	✓	—	—	—
Settings	✓	—	—	—
Network / Send UNP	✓	✓	—	—
Owner Portal (separate URL /owner.html)	—	—	✓	—
Marketplace (separate URL /market.html)	✓	✓	✓	✓

URL cheat sheet

Role	URL
Admin / Operator panel	https://<your-domain>/ or http://<ip>:3000/
Owner panel	https://<your-domain>/owner.html
Marketplace	https://<your-domain>/market.html
RPC endpoint (for MetaMask)	https://<your-domain>/rpc