Revenue Bonds Protocol - Whitepaper V2

Version 2.0 - February 2026

Network: Arbitrum One (Mainnet) **Website:** https://equorumprotocol.org

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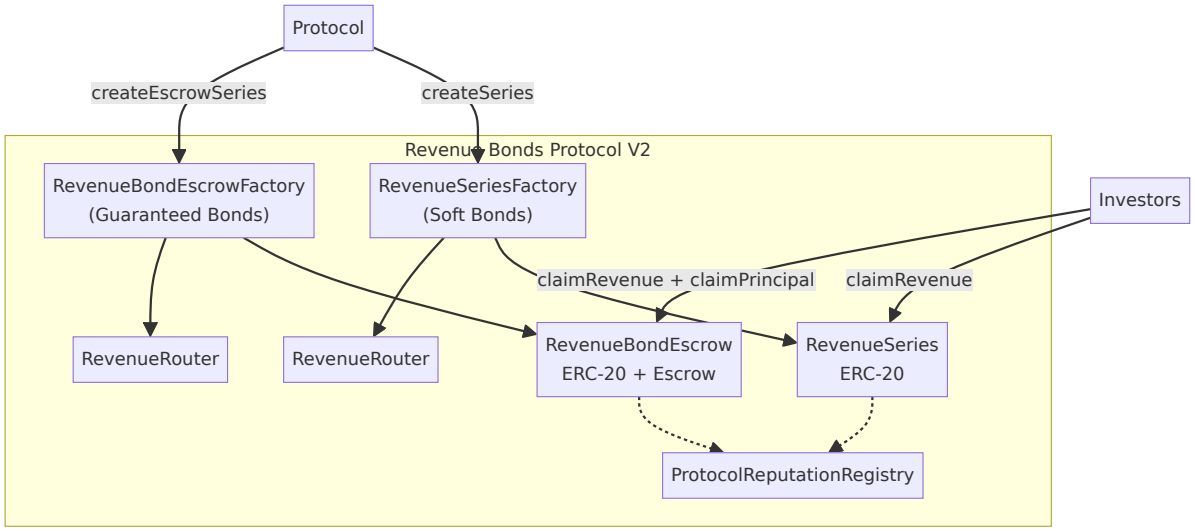
Introduction

Revenue Bonds Protocol is a permissionless framework for tokenizing revenue-sharing agreements on-chain.

Any protocol can create a **Revenue Bond Series** (ERC-20) plus a **Revenue Router**, deposit revenue periodically, and holders claim their proportional share trustlessly. Creation is self-issued: `protocol == msg.sender`.

V2 introduces two distinct bond types, an on-chain reputation system, and a modular policy architecture.



What's New in V2

- **Dual Bond Model**: Soft Bonds (revenue-only) and Guaranteed Bonds (revenue + principal escrow)
- **On-chain Reputation**: ProtocolReputationRegistry tracks payment history
- **Pluggable Policies**: Modular fee, safety, and access control
- **Deployer Pattern**: EscrowFactory stays under 24KB via EscrowDeployer + RouterDeployer
- **22 Security Fixes**: Two internal audit rounds

What This Protocol Is NOT

- **Not a stablecoin** - Revenue Bonds are not pegged to any value
- **Not a guarantee of yield** - Revenue depends entirely on the issuing protocol
- **Not a legal wrapper** - This is not equity, debt, or a regulated security instrument
- **Not an oracle of revenue** - The protocol cannot verify if the correct percentage is sent
- **Not a lending protocol** - No borrowing, liquidations, or collateral involved
- Regulatory classification may vary by jurisdiction

What it IS: Infrastructure for transparent, on-chain accounting and distribution of voluntarily deposited revenue.

The Problem

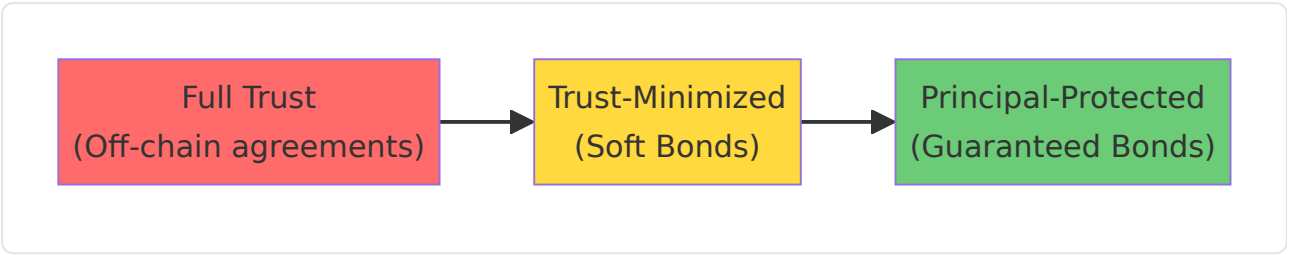
For Protocols

| Option | Problem | |--------|---------| | Sell tokens | Dilution + sell pressure | | VC debt | Centralized + legal complexity | | Treasury diversification | Must sell tokens | | Revenue sharing (off-chain) | Manual, opaque, no secondary market |

For Investors

- **Opacity**: No way to verify actual revenue or distributions
- **Illiquidity**: Locked in until agreement ends
- **High minimums**: Small investors excluded
- **Trust dependency**: No enforcement mechanism

The Trust Spectrum



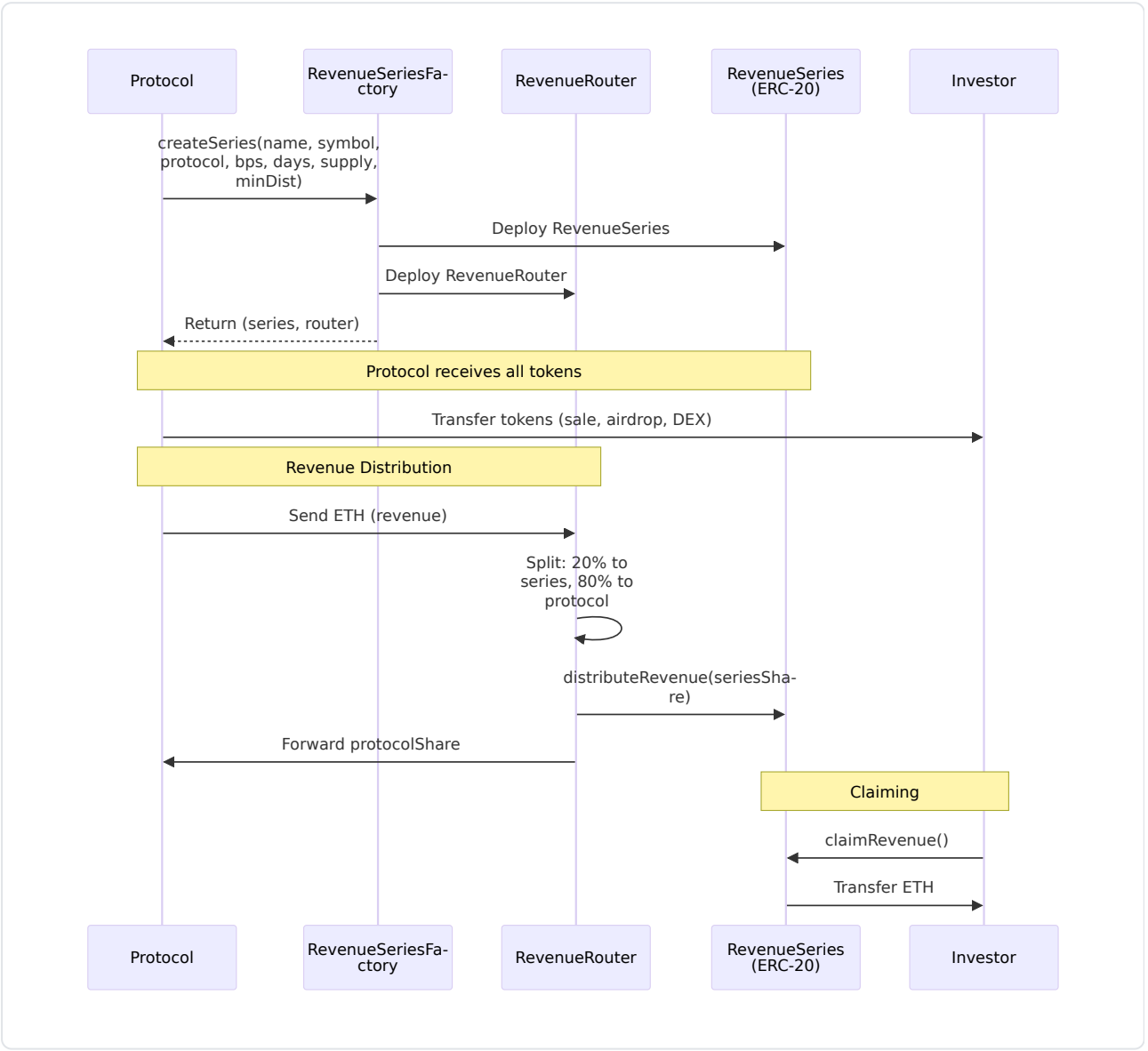
V2 addresses the full spectrum: Soft Bonds for established protocols, Guaranteed Bonds for new protocols building trust.

The Solution: Two Bond Types

| Feature | Soft Bond | Guaranteed Bond | |---------|-----------|-----------------| | **Principal** | None | Locked in escrow | | **Risk profile** | Higher (trust-based) | Lower (principal protected) | | **Token minting** | At creation | After principal deposit | | **Sale mechanism** | Off-chain / DEX | Built-in buyTokens() | | **State machine** | Active -> Matured | PendingPrincipal -> Active -> Matured | | **Best for** | Established protocols | New protocols | | **Factory** | RevenueSeriesFactory | RevenueBondEscrowFactory |

Soft Bonds

Flow



Example: CoffeeDAO

CoffeeDAO wants to share 20% of revenue for 1 year:

```
factory.createSeries(
    "CoffeeDAO Revenue 2026", "COFFEE-REV",
    msg.sender, 2000, 365, 1000000e18, 0.001 ether
);
```

- Protocol receives 1M COFFEE-REV tokens
- Distributes via sale, airdrop, DEX
- Monthly: sends revenue to router
- Router splits 20% to series, 80% back to protocol
- Alice holds 10,000 tokens (1%): claims 1% of each distribution

Revenue Accounting (Synthetix Pattern)

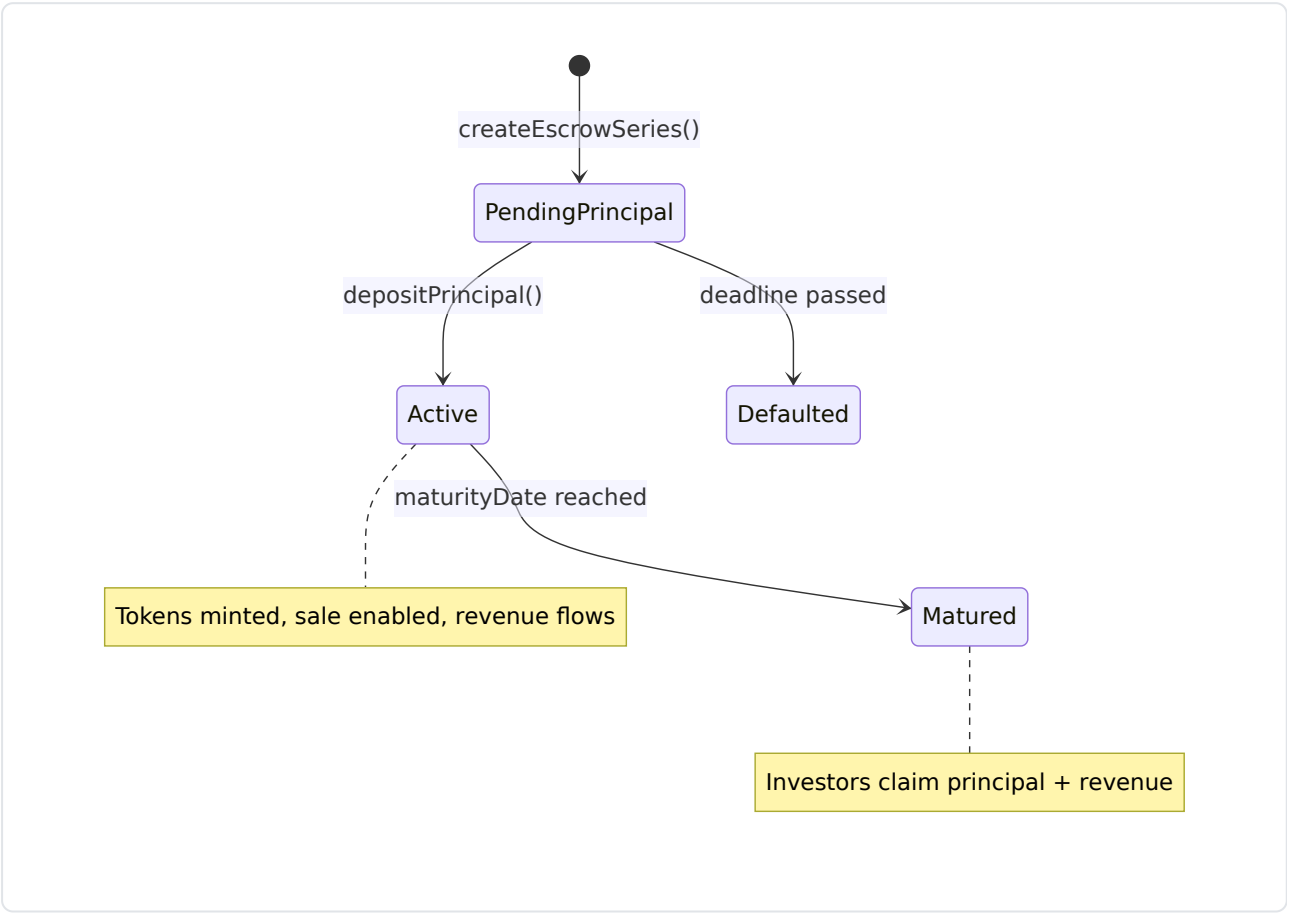
```
uint256 public revenuePerTokenStored;
mapping(address => uint256) public userRevenuePerTokenPaid;
mapping(address => uint256) public revenueRewards;

// On distribution: revenuePerTokenStored += (amount * 1e18) / totalSupply
// On claim: owed = balance * (revenuePerTokenStored - userRevenuePerTokenPaid[user
```

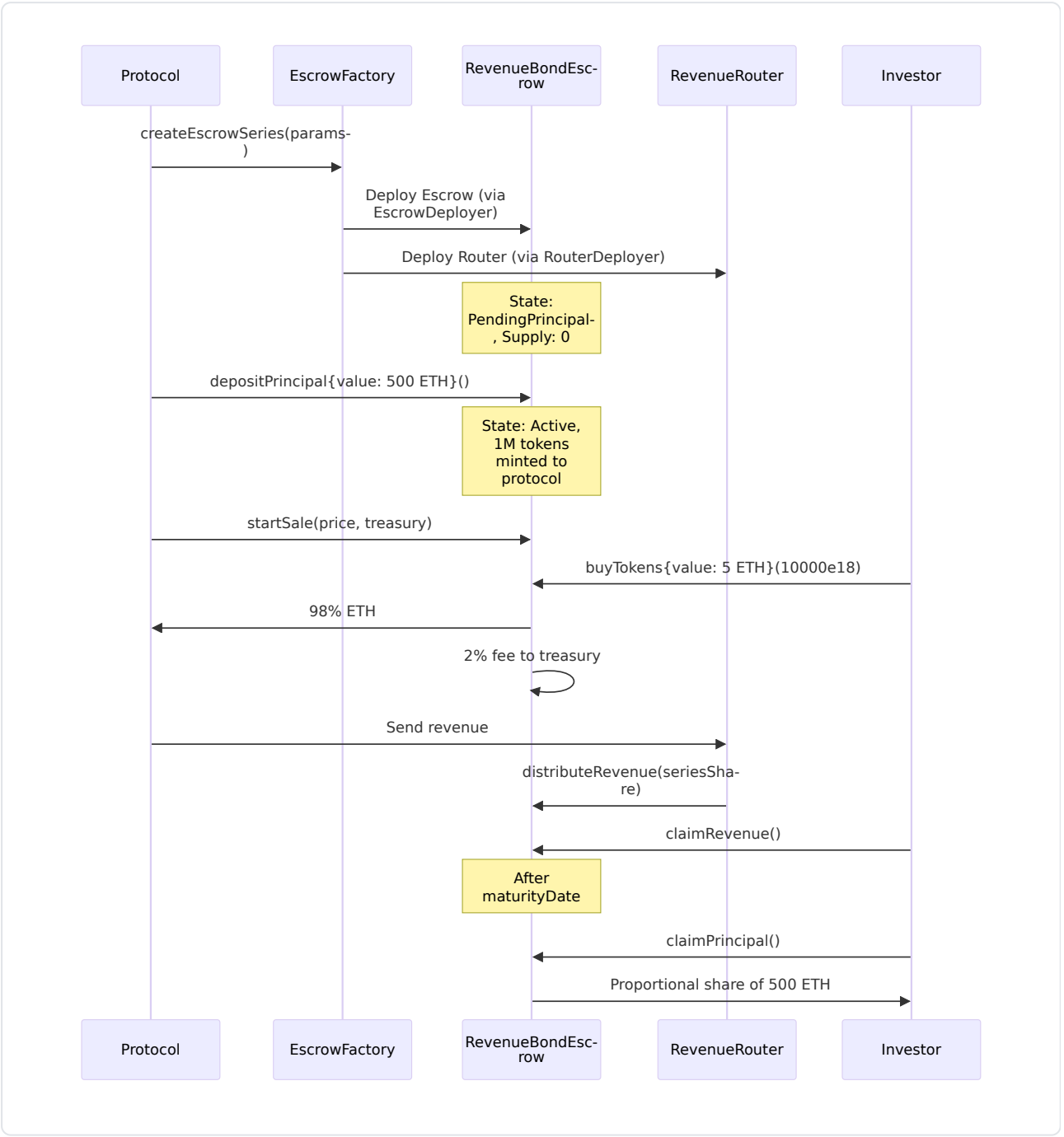
Correctly handles token transfers, multiple distributions, and new holders.

Guaranteed Bonds

State Machine



Flow


Protocol
EscrowFactory
RevenueBondEsc-row
RevenueRouter
Investor
createEscrowSeries(params-)
Deploy Escrow (via EscrowDeployer)
Deploy Router (via RouterDeployer)
State: PendingPrincipal-, Supply: 0
depositPrincipal{value: 500 ETH}()
State: Active, 1M tokens minted to protocol
startSale(price, treasury)
buyTokens{value: 5 ETH}(10000e18)
98% ETH
2% fee to treasury
Send revenue
distributeRevenue(seriesSha-re)
claimRevenue()
After maturityDate
claimPrincipal()
Proportional share of 500 ETH
Protocol
EscrowFactory
RevenueBondEsc-row
RevenueRouter
Investor

Example: NewProtocol

```
// 1. Create
escrowFactory.createEscrowSeries(
    "NewProtocol Guaranteed Bond", "NEWP-GB",
    msg.sender, 2000, 180, 1000000e18, 500 ether, 0.001 ether, 30
);

// 2. Deposit principal (activates series, mints tokens)
escrow.depositPrincipal{value: 500 ether}();

// 3. Sell tokens
escrow.startSale(0.0005 ether, treasuryAddress);

// 4. Investor buys 100K tokens for 50 ETH
escrow.buyTokens{value: 50 ether}(100000e18);

// 5. At maturity: investor claims 10% of 500 ETH = 50 ETH principal + revenue
escrow.claimPrincipal();
escrow.claimRevenue();
```

Principal Redemption

``` claimable = (principalAmount * balanceOf(user)) / totalTokenSupply ```

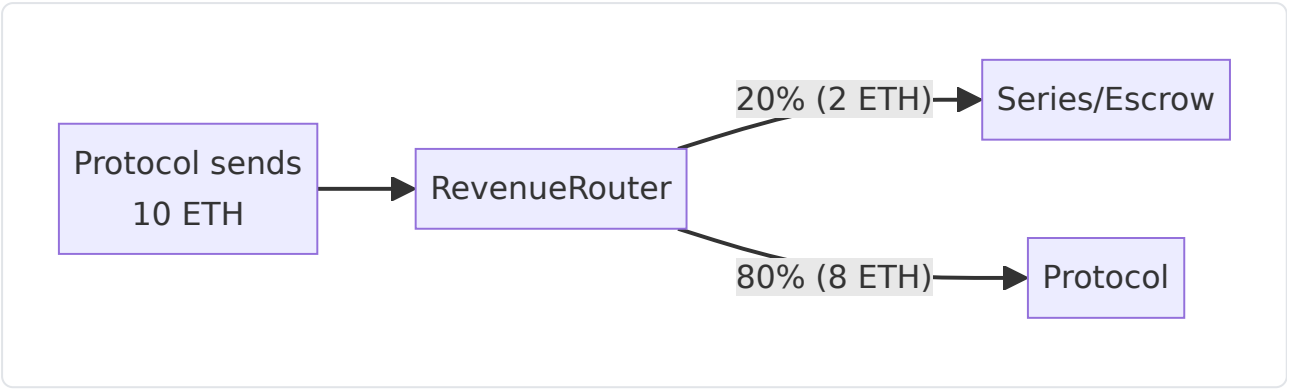
Each address claims once. Principal is locked in contract - protocol cannot withdraw.

Sale Mechanism

2% fee hardcoded: 98% to protocol, 2% to treasury. Protocol controls start/stop.

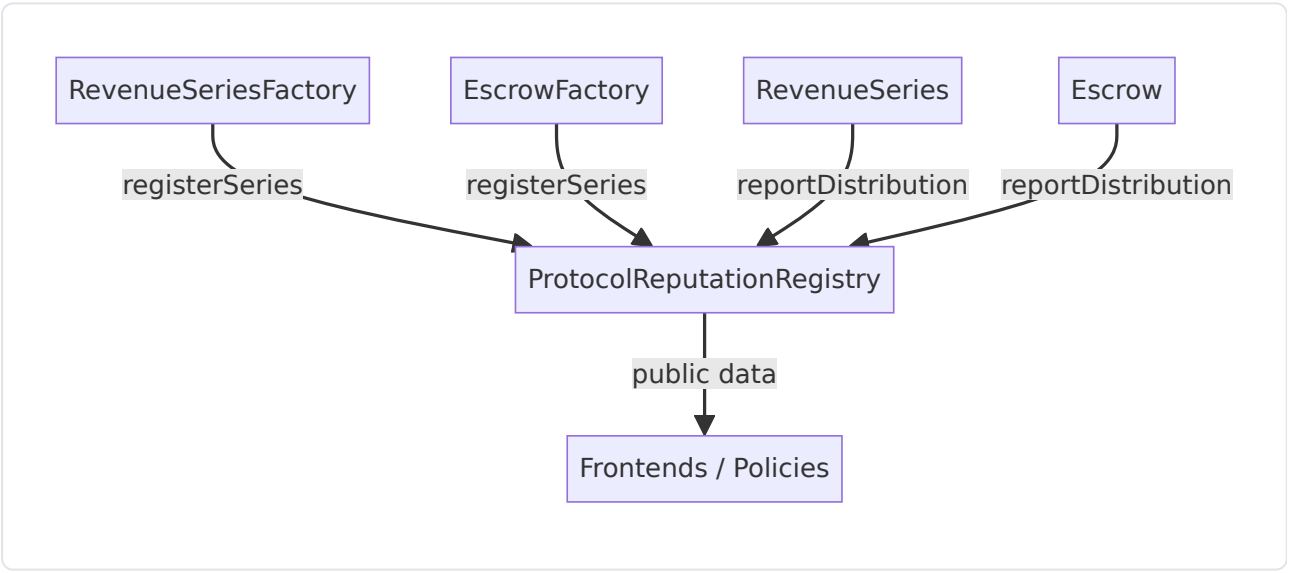
Revenue Routing

Both bond types use the same RevenueRouter:
```



| Scenario | Behavior | |----------|----------| | Series active | Split and distribute | | Series matured | Return 100% to protocol | | Series inactive (PendingPrincipal) | Hold as pending | | Distribution fails | Increment failedRouteCount |

Protocol Reputation System



Data Tracked Per Protocol

- Total series created
- Revenue promised vs delivered
- On-time vs late payments
- Last payment timestamp

- Blacklist status

Score Calculation (Off-chain)

``` deliveryRatio = totalRevenueDelivered / totalRevenuePromised punctualityScore = onTimePayments / (onTimePayments + latePayments) ```

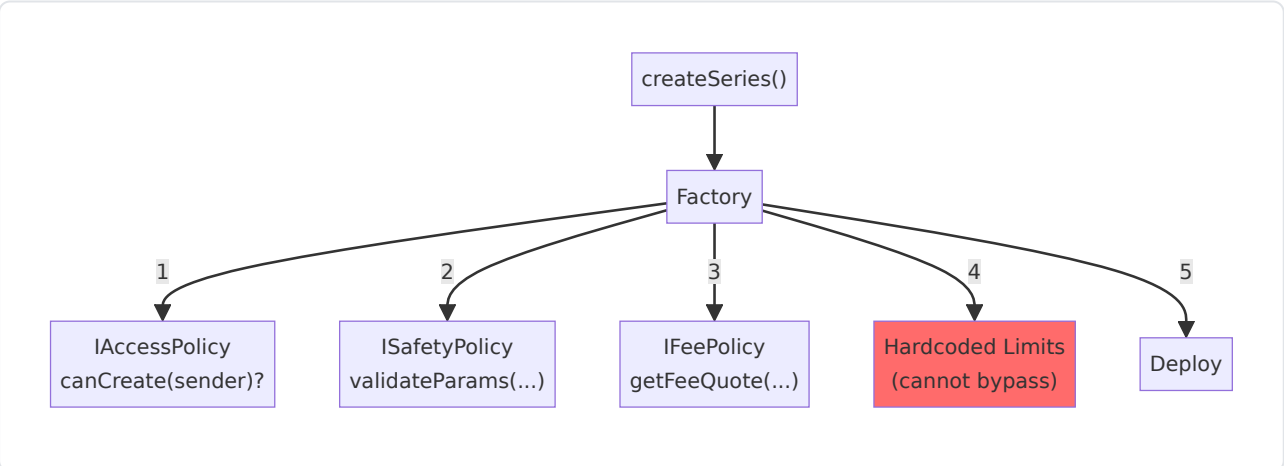
Expected Cadence

| Duration | Expected Frequency | |----------|--------------------| | > 180 days | Monthly (30 days) | | <= 180 days | Weekly (7 days) |

Limitations

- Cannot verify actual protocol revenue (no oracle)
- Score is a heuristic, not absolute truth
- Useful for trust-building, not trustless enforcement

Pluggable Policy Architecture



Three Policy Types

Fee Policy (`IFeePolicy`): Calculate creation fees dynamically.
```

```
function getFeeQuote(...) external view returns (uint256 fee, address feeReceiver);
```

Safety Policy (`ISafetyPolicy`): Additional parameter validation. Can only restrict further, never relax hardcoded limits.

```
function validateParams(...) external view; // reverts if invalid
```

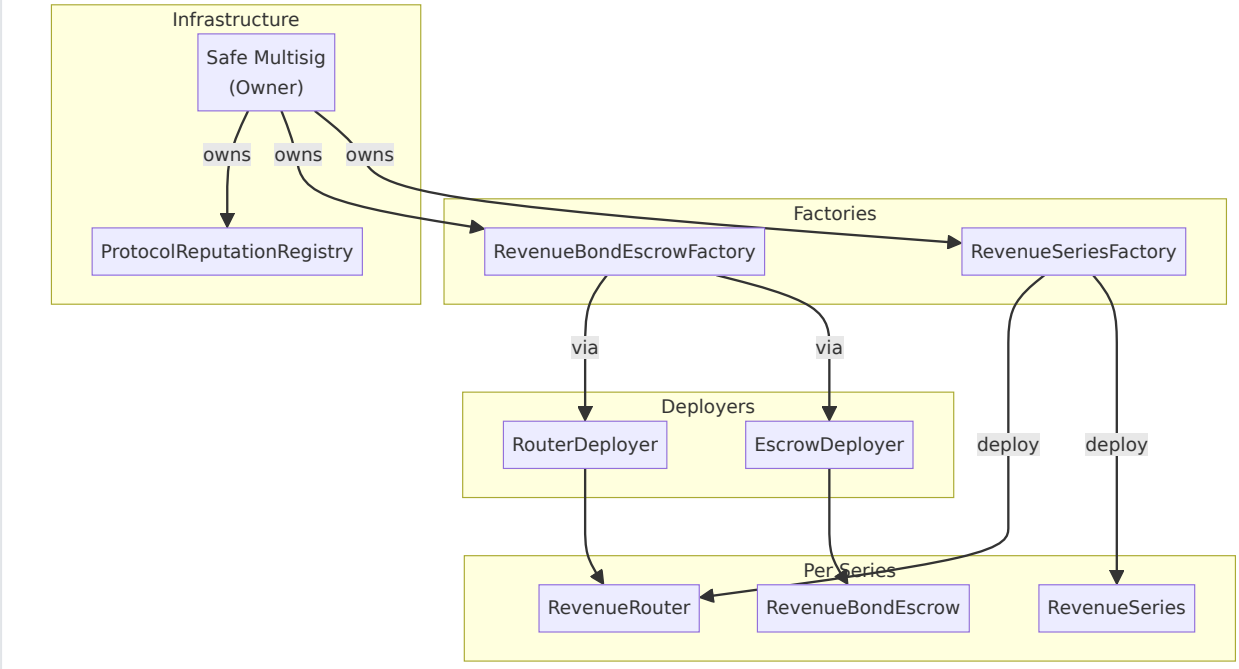
Access Policy (`IAccessPolicy`): Control who can create series.

```
function canCreate(address sender) external view returns (bool);
```

Current state: All `address(0)` (disabled). Protocol is fully permissionless.

Technical Architecture

Contract Map



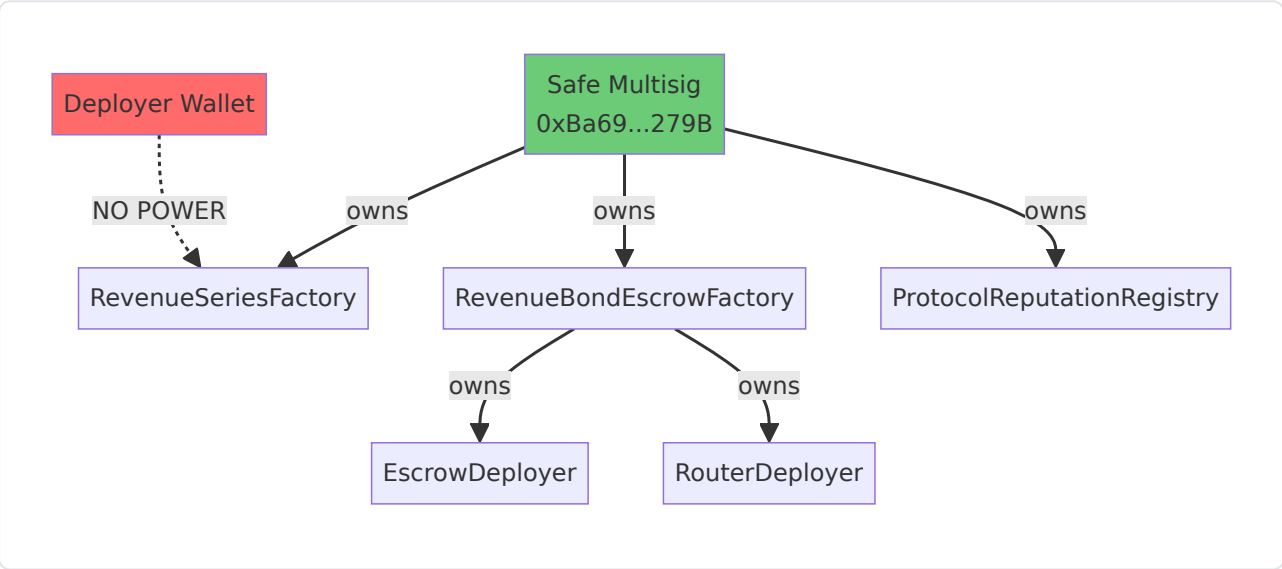
Deployer Pattern

EscrowFactory (5.9 KB) calls EscrowDeployer (14.2 KB) and RouterDeployer (5.8 KB) to stay under 24KB limit. Both deployers are owned by the factory.

Safety Limits (Hardcoded)

| Parameter | Min | Max | |-----------|-----|-----| | Revenue Share | 1 BPS | 5000 BPS (50%) | | Duration | 30 days | 1825 days (5 years) | | Total Supply | 1,000 tokens | No max | | Min Distribution | 0.001 ETH | No max | | Deposit Deadline | 1 day | 90 days |

Ownership



Deployer wallet has zero power after deployment.

Security Model

Audit Status

- **Internal:** 2 rounds, 22 issues fixed (12 Critical, 7 Medium, 3 Low)
- **External:** Planned Q2 2026

Protections

- Solidity 0.8.24 overflow protection
- ReentrancyGuard on all state-changing functions
- Synthetix pattern prevents double-claim
- Hardcoded limits cannot be bypassed
- Interface validation on policy contracts
- Immutable series parameters
- Pull-based claims (no push-payment failures)

Threat Model

| Threat | Mitigation | Residual Risk | |--------|------------|---------------| | Smart contract bug | 2 audit rounds, open source | Medium | | Issuer doesn't pay | Reputation system, Guaranteed Bonds | High (Soft), Low (Guaranteed) | | Reentrancy | ReentrancyGuard | Low | | Overflow | Solidity 0.8.24 | Very Low | | Malicious policy | Interface validation, owner-only | Low | | Principal theft | Locked in contract, no withdrawal | Very Low |

Trust Assumptions

Soft Bonds: Trust that protocol sends revenue. Distribution is trustless once deposited.

Guaranteed Bonds: Principal is cryptographically enforced. Revenue honesty is still trust-based.

Example Use Cases

All examples are hypothetical.

Example 1: Established DEX (Soft Bond)

``` SwapHub: 0.3% fee, $100M monthly volume Bond: 25% share, 90 days, 1M tokens Revenue: ~25 ETH/month to series Holder (1%): 0.25 ETH/month ($750) ```
```

Example 2: New Protocol (Guaranteed Bond)

``` NewDEX: Launching, needs to build trust Bond: 20% share, 180 days, 1M tokens, 500 ETH principal Investors buy tokens, get principal back at maturity Revenue: bonus on top of principal return ```

Example 3: NFT Marketplace (Soft Bond)

``` ArtChain: 2.5% fee, $5M monthly volume Bond: 40% share, 365 days, 50K tokens Revenue: ~16.67 ETH/month Holder (1%): 0.167 ETH/month ($500) ```

Example 4: GameFi (Guaranteed Bond)

``` CryptoQuest: In-game purchases, $200K/month Bond: 30% share, 365 days, 100K tokens, 200 ETH principal Investors get principal + 30% of revenue Lower risk entry for gaming investors ```

Example 5: DAO Treasury Yield

``` BuilderDAO: $2M treasury, 5% APY Bond: 50% share, 365 days, 10K tokens Revenue: ~16.67 ETH/year to series Members earn yield from DAO treasury ```

Getting Started

For Protocols

- **Choose bond type**: Soft (no principal) or Guaranteed (with escrow)
- **Set parameters**: Revenue share (1-50%), duration (30-1825 days), supply
- **Create series** via https://equorumprotocol.org or directly on-chain
- **Distribute tokens** (Soft) or **deposit principal then sell** (Guaranteed)
- **Send revenue** to router address periodically

For Investors

- **Research** the protocol and bond terms
- **Buy tokens** from protocol, DEX, or built-in sale (Guaranteed)
- **Hold tokens** - revenue accrues automatically
- **Claim revenue** anytime via app or contract
- **Claim principal** at maturity (Guaranteed bonds only)

For Developers

```
npm install
npx hardhat compile
npx hardhat test
npx hardhat run scripts/deploy_v2_testnet.js --network arbitrumSepolia
npx hardhat run scripts/deploy_v2_mainnet.js --network arbitrum
```

See docs/INTEGRATION.md for full integration guide.

FAQ

Q: What is a Revenue Bond? A: An ERC-20 token representing a right to receive a share of a protocol's revenue.

Q: What's the difference between Soft and Guaranteed? A: Soft Bonds are revenue-only (trust-based). Guaranteed Bonds lock principal in escrow (principal-protected).

Q: Can I sell my tokens? A: Yes, they're standard ERC-20. Trade on any DEX.

Q: What if the protocol doesn't pay? A: Soft Bonds: you lose expected revenue. Guaranteed Bonds: you still get your principal back at maturity.

Q: How much does it cost to create a series? A: Only gas fees. No protocol fees currently (policies disabled).

Q: Can parameters be changed after creation? A: No. Revenue share, duration, supply, and principal are immutable.

Q: What happens at maturity? A: No more revenue distributed. Holders claim remaining revenue. Guaranteed Bond holders also claim principal.

Q: Is the code audited? A: Two internal audit rounds completed (22 fixes). External audit planned Q2 2026.

Q: Who controls the protocol? A: Safe multisig (`0xBa69...279B`). Deployer wallet has zero power.

Q: Can the protocol be paused? A: The Safe can pause new series creation. Existing series continue operating.

Contract Addresses

V2 - Arbitrum One (Mainnet)

Contract	Address	Arbiscan
RevenueSeriesFactory	`0x280E83c47E243267753B7E2f322f55c52d4D2C3a`	Link
RevenueBondEscrowFactory	`0x2CfE9a33050EB77fC124ec3eAac4fA4D687bE650`	Link
ProtocolReputationRegistry	`0xfe0A22D77fdf98cC556CBc2dC6B3749EBa4E89bA`	Link
EscrowDeployer	`0x989BCB780EEE189Bc85e04505e59Fd2Fb3CAA843`	Link
RouterDeployer	`0x7c80F6312BFD762B958Ccf9DF2E397840c7856d3`	Link
Treasury/Owner (Safe)	`0xBa69aEd75E8562f9D23064aEBb21683202c5279B`	Link

V2 - Arbitrum Sepolia (Testnet)

Contract	Address
RevenueSeriesFactory	`0x963Db5378cB47f7d9DBf07CB2378DA39b427789b`
RevenueBondEscrowFactory	`0x1e88fC591c2E5cA12C713f7C4BE39f2b14D202cB`
ProtocolReputationRegistry	`0xE6cBDa1dBAb26d6740d5D0158EF4b0114fcb525F`

V1 (Deprecated)

| Contract | Address | |----------|---------| | Factory (V1) | `0x8afA0318363FfBc29Cc28B3C98d9139C08Af737b` |

Links & Resources

Website: https://equorumprotocol.org **GitHub:** https://github.com/EquorumProtocol/Equorum-Revenue-Bonds **Discord:** https://discord.gg/nYMuD8By **Twitter:** @Equorumprotocol **Reddit:** r/EquorumProtocol

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Disclaimer

- **Experimental Technology:** This protocol has undergone internal audits but not a formal external audit. Use at your own risk.
- **No Guarantees:** There are no guarantees of revenue, returns, or token value.
- **Not Financial Advice:** This whitepaper is for informational purposes only.
- **Regulatory Uncertainty:** Revenue sharing tokens may be subject to securities regulations. Consult legal counsel.
- **Smart Contract Risk:** Bugs or vulnerabilities could result in loss of funds.
- **No Liability:** The protocol developers assume no liability for losses.
- **Examples Are Hypothetical:** All examples are for illustration only.

Conclusion

Revenue Bonds Protocol V2 provides two complementary primitives for on-chain revenue sharing:

- **Soft Bonds** for established protocols with proven track records

- **Guaranteed Bonds** for new protocols that need to build trust with principal protection

Combined with the on-chain reputation system and pluggable policy architecture, V2 creates a foundation for a permissionless capital-raising ecosystem where protocols can raise funds without dilution and investors can earn revenue with varying levels of risk protection.

The future of revenue sharing is on-chain.

Version: 2.0 **Last Updated:** February 2026 **License:** MIT