Building on the OP Stack with Avail

The OP Stack, instrumental for the development of L2 rollups and maintained by the [Optimism Collective (opens in a new tab)](#), is now extendable with Avail as an alternative data availability layer. Developers working with the OP Stack can utilize Avail to address data availability concerns, enhancing the stack's scalability while simultaneously cutting down data handling costs.

Transaction Lifecycle

1. Transaction Submission
2.
    - Process
3.
    - : Users send transactions to the Sequencer.
4.
    - Role
5.
    - : The Sequencer temporarily holds the transactions before they are batched.
6. Batch Processing
7.
    - Component
8.
    - :op-batcher
9.
    - Function
10.
    - : Collects transactions into batches for more efficient processing.
11. Data Availability with Avail
12.
    - Component
13.
    - :op-plasma
14.
    - Function
15.
    - : Sidecar run alongsideop-batcher
16.
    - . Sends the transaction batches to Avail's blockchain, ensuring data availability.
17. Transaction Reference Creation
18.
    - Outcome
19.
    - : Avail returns a unique transaction reference toop-avail
20.
    - .
21. Calldata Submission to Ethereum
22.
    - Component
23.
    - :op-batcher
24.
    - Action
25.
    - : Submits the transaction reference from Avail ascalldata
26.
    - to Ethereum.
27. Verifier and Rollup Node Integration
28.
    - Component
29.
    - :op-node
30.
    - Function
31.
    - : Queries data commitment from Ethereum and fetches L2 transaction data throughop-avail
32.
    - , completing the data availability cycle for OP Stack transactions.

Interoperability and Fault Proofing

The Avail OP Stack will evolve to integrate Optimism's fault proof system and the OP Stack sequencer's decentralization efforts. The Avail data root is posted to Ethereum through the Vector data attestation bridge, allowing for seamless verification of data availability consensus.

Developer Onboarding

Developers can start experimenting with the Avail OP Stack today by following the guide in the [Avail OP Stack(opens in a new tab)](#) repo. For support and updates, join the Avail Forum or Discord.

[OP Stack](#) [Deploy an Avail-Powered OP Stack Alt-DA Optimium](#)