

# Advancing Ethereum Scalability

Architectural Innovation Trends in the Layer 2

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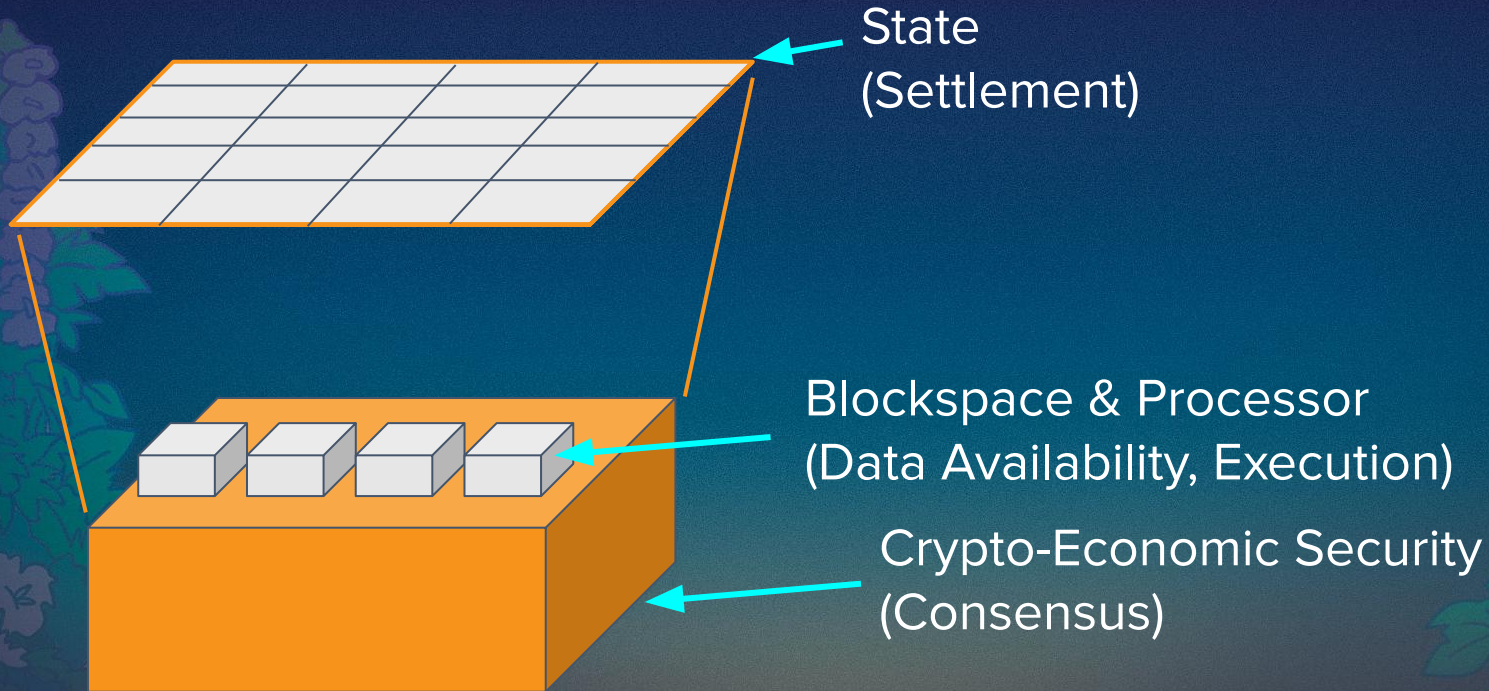
Section 1

# History lessons



# Paradigm 1: Monolithic Bitcoin & POW Forks

Bitcoin



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Bitcoin

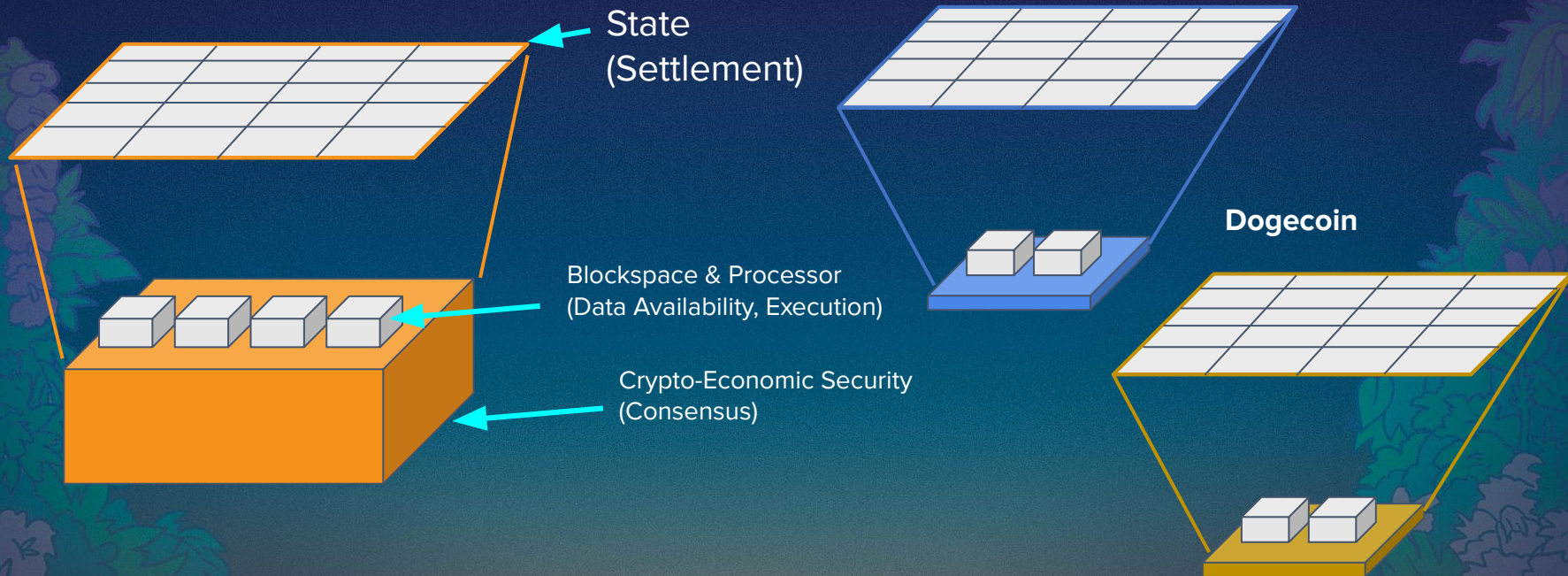
Litecoin

Dogecoin

State  
(Settlement)

Blockspace & Processor  
(Data Availability, Execution)

Crypto-Economic Security  
(Consensus)



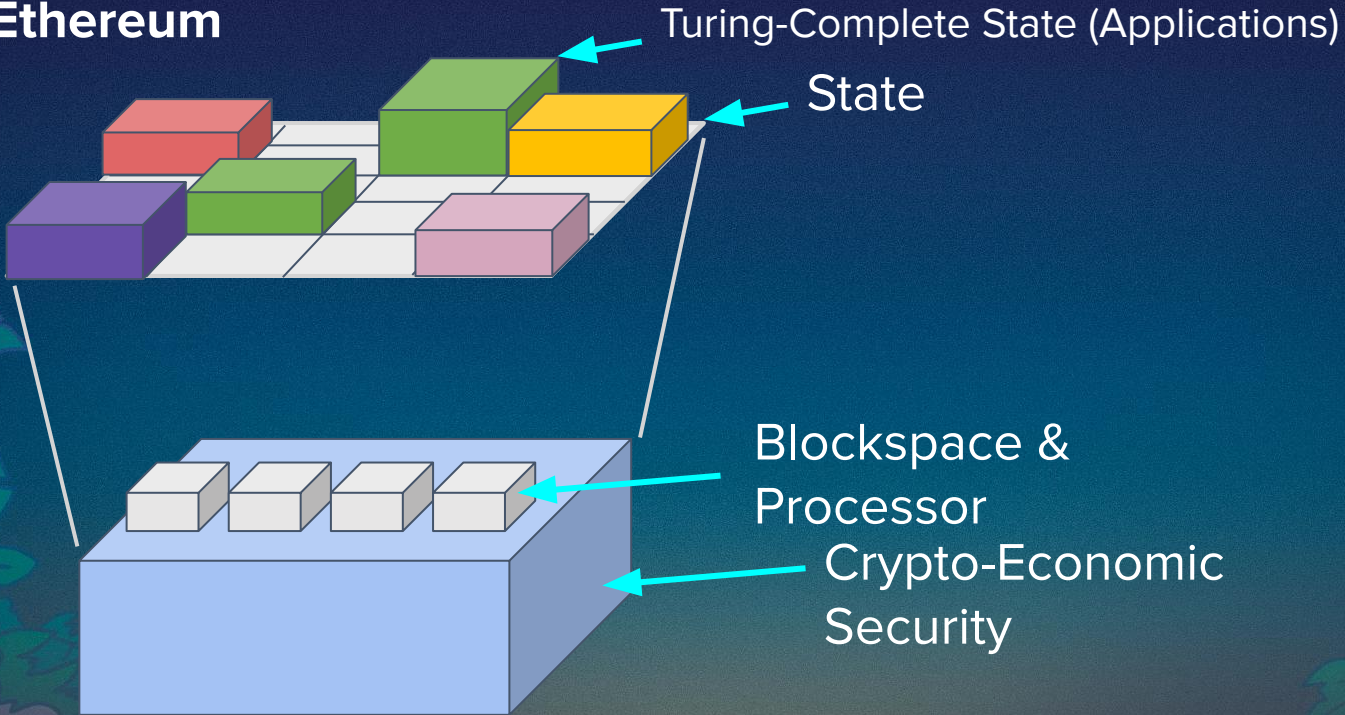


Section 2

# Ethereum

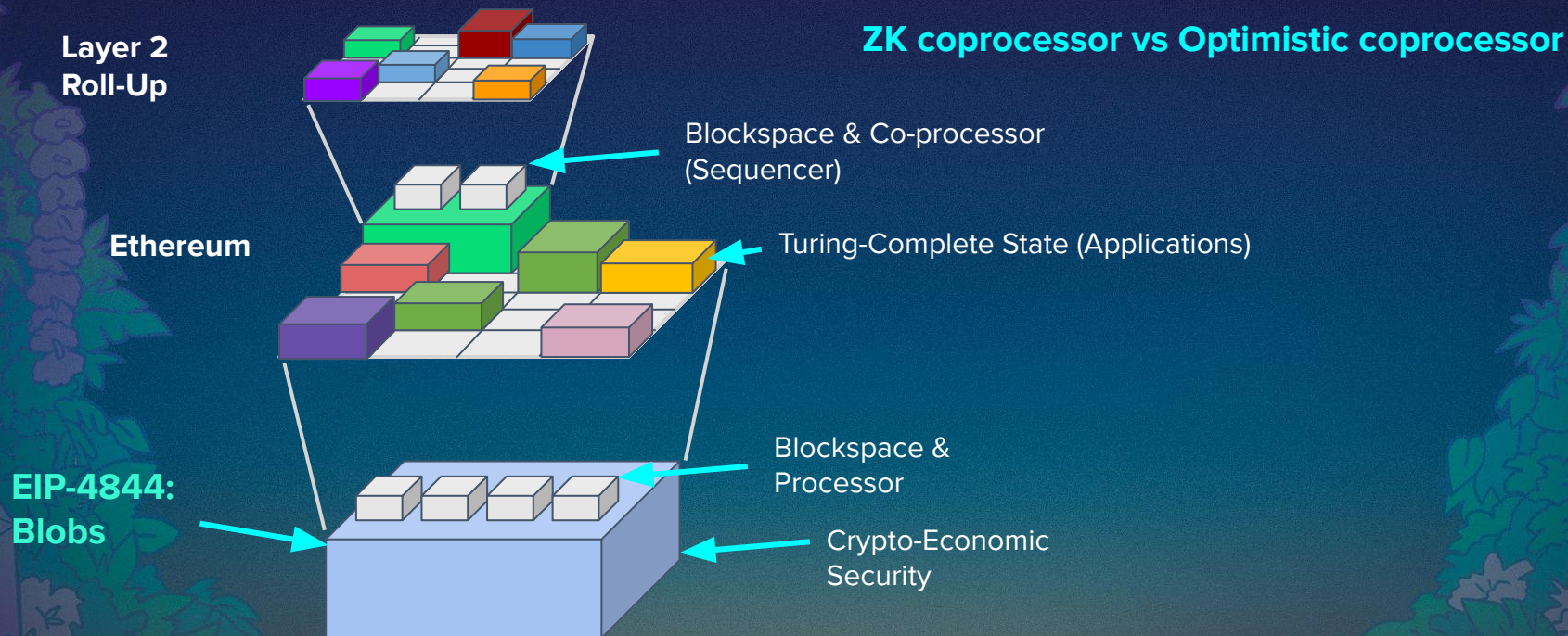
## Paradigm 2: Ethereum POS

Ethereum

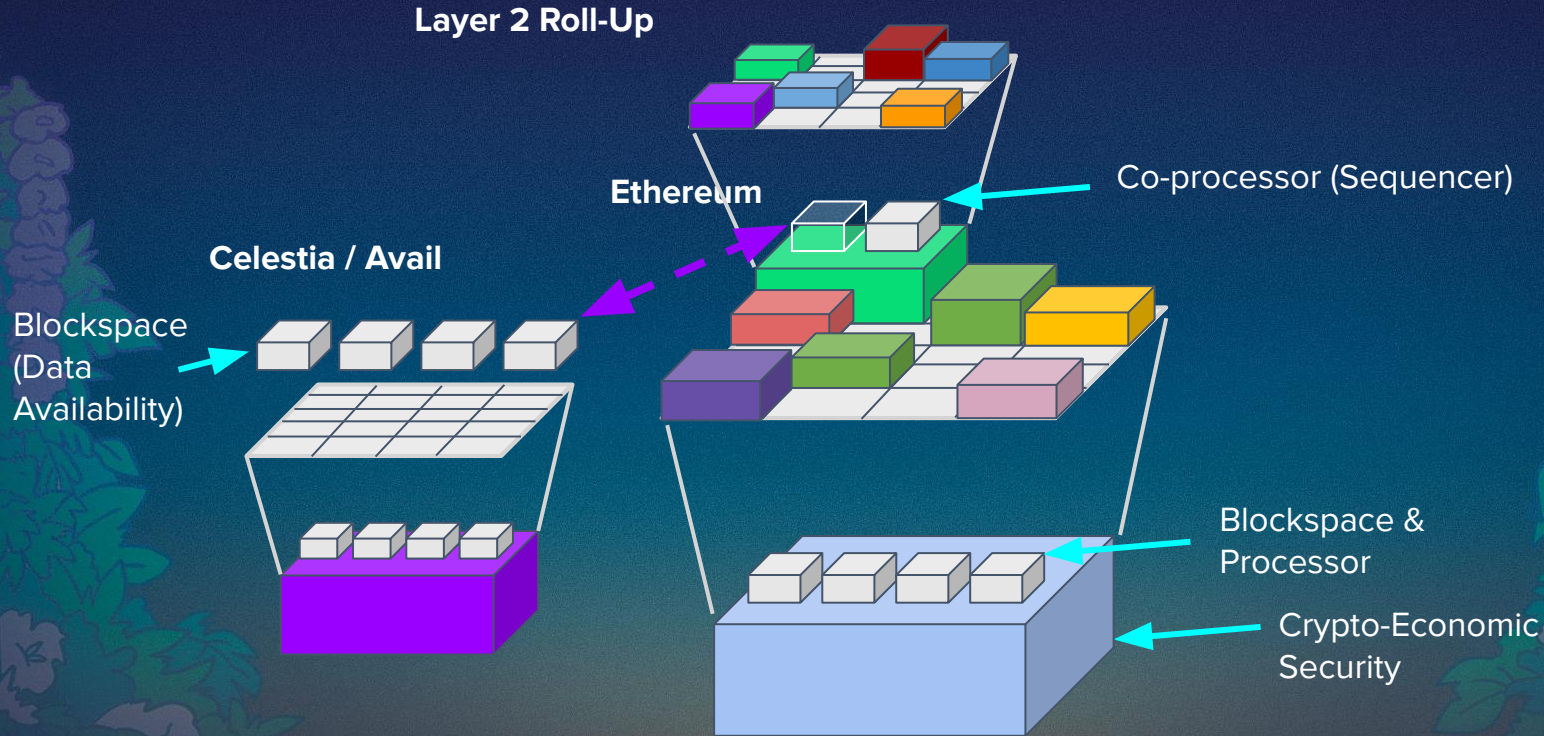




# Paradigm 3a: Ethereum Layer 2 rollups

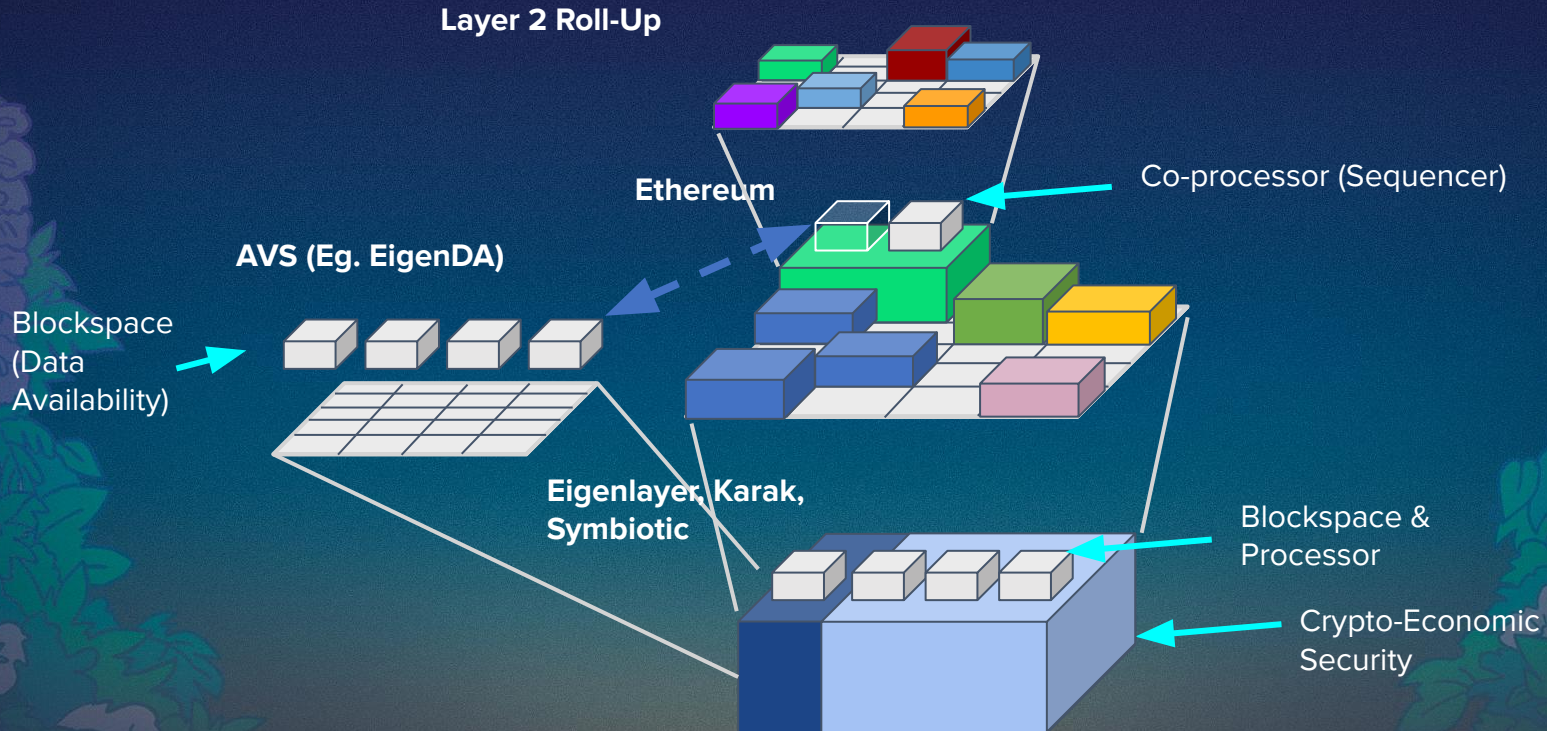


# Paradigm 3b: Ethereum Modular rollups





# Paradigm 3c: Ethereum Modular Restaked rollups



# Paradigm 4: Based Rollup Architecture

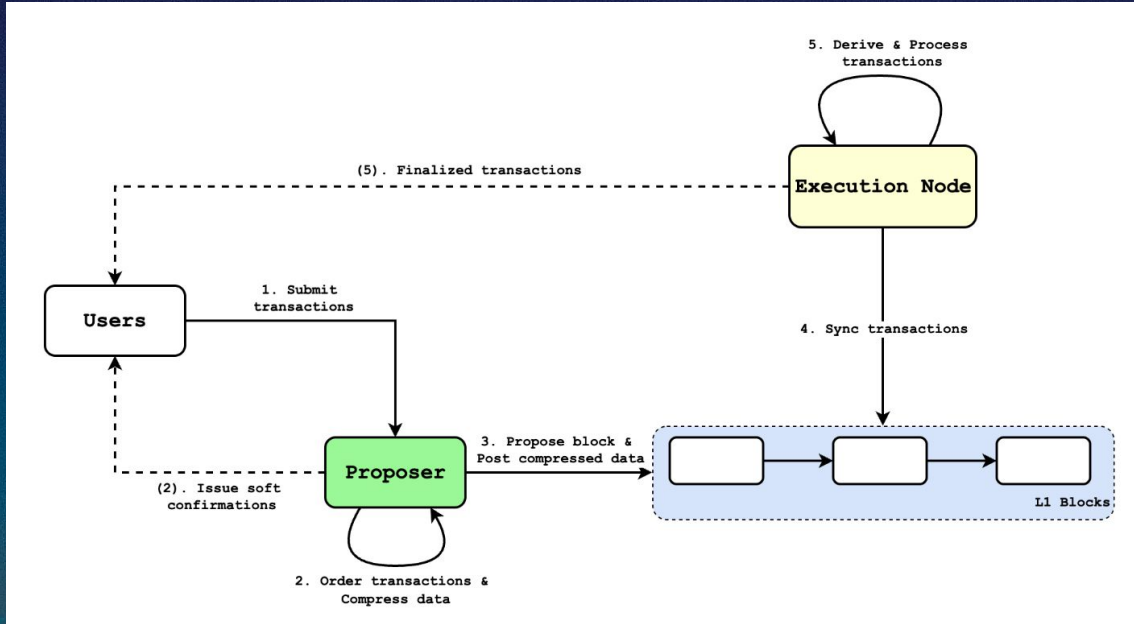


Image sourced from Rise' Docs



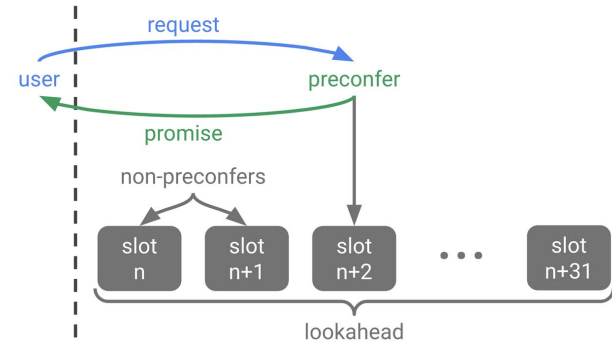
# Paradigm 4: Based Preconfirmations

Based precons require two pieces of onchain infrastructure:

- **proposer slashing:** A proposer must have the ability to opt in to additional slashing conditions. This write-up assumes slashing is achieved with EigenLayer-style restaking.
- **proposer forced inclusions:** A proposer must have the ability to forcefully include transactions onchain, even with PBS when self-building is non-economical. This write-up assumes forced inclusions are achieved with [inclusion lists](#) <sup>166</sup>.

## promise acquisition

A user that wants their transaction preconfed should aim to acquire a promise from, at minimum, the next preconf in the proposer lookahead. This process starts with the user sending a promise request to the next preconf.



Images sourced from Justin Drake, ethresearch.ch

# **The INIFINITE garden is truly infinite Thank you!**

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