# The Blockchain Bridge That You Dream About

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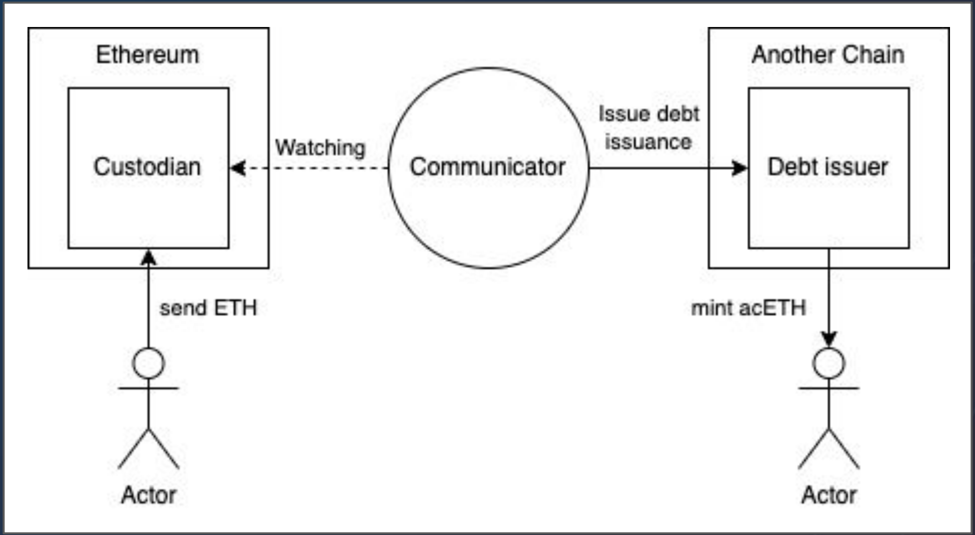
Section 1

# What Is A Bridge?

# What Is A Bridge (Deposit)

Assets are being custodied on the main chain, and a form of debt token is issued to the user on the target chain



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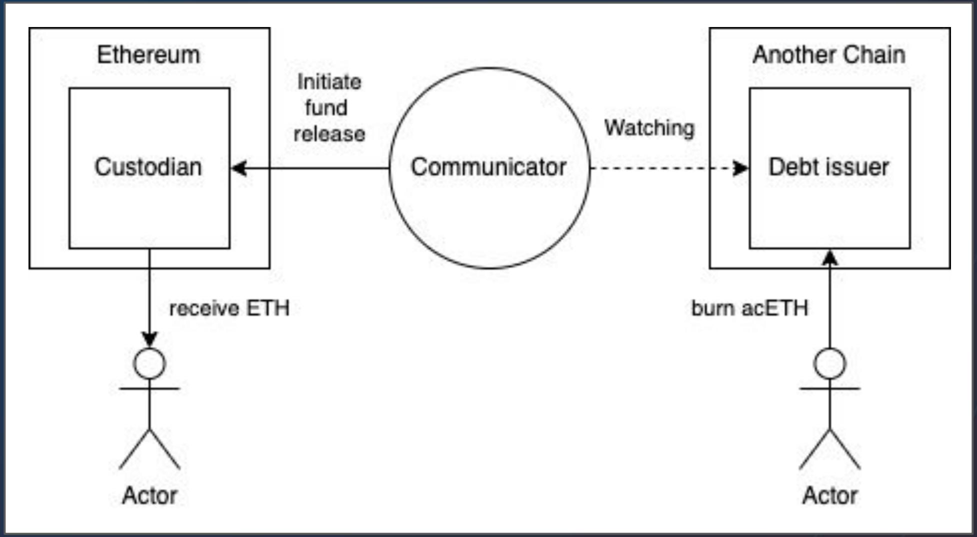
# What Is A Bridge (Withdrawal)

The user burns the debt token on the other chain and the communicator tells the custodian that funds can now be released



Section 2

# The Menu

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- Speed
  Bridging should happen quickly
- Finality
  Once bridging happens, it will not be rolled back
- Atomicity
  Everything happens at once on both chains - wouldn’t it be cool?
- Security
  Losing funds is never fun

# The Menu

- Censorship Resistance
  Everyone should be able to use the bridge
- Availability
  We should be able to send transactions to the bridge whenever
- Liveness
  All transactions should eventually get processed
- Pausability
  If one chain has troubles, we would like to pause the bridge

# The Menu

- Liquidity
  We would like to be able to bridge arbitrary amounts
- Expressive Power
  We would like to be able to bridge arbitrary assets (ERC20, ERC721)
- Cost Efficiency
  Bridging should be cheap
- Privacy
  Bridging should be private
- Transparency and Auditability
  Everyone should be able to monitor the bridge activity

Section 3

# Why Is This Hard?

# Trade Offs

- Speed vs. Finality
  Finality has to be reached on two chains, so it is unlikely to be fast
- Availability vs. Pausing
  Paused bridge is not available
- Security vs. Liquidity
  Limiting liquidity often serves as an additional security measure

# Thank you!

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