# Reviewing wPOKT Token Migration

Purpose of this Doc Primary References Context, Consideration & Concerns 1. Building & Maintaining Custom Software 2. Exhaustive exploration of the bridging industry 3. Potential lock-in & future work 4. Lack of understanding of the current solution Follow-up notes tl;dr Why are we still going with the original Hyperlane proposal? Bonus

tl;dr Let's go with the original proposal of using Hyperlane.

# **Purpose of this Doc**

- 1. Unblock the wPOKT migration work from kicking off
- 2. Capture & summarize conversations & key points that temporarily blocked this work

# **Primary References**

- 1. Raid Guild Proposal
- 2. wpokt-migration discord thread
- 3. Messaging protocol comparison

# **Context, Consideration & Concerns**

1. Building & Maintaining Custom Software

#### Morse (v0) context

- Morse wPOKT bridge was built in-house due to the legacy frameworks & infrastructure it runs on.
  - 3 year old Tendermint fork
  - ABCI app but not Cosmos SDK compatible
  - Not IBC compatible
- Building a custom bridge (i.e. rolling our own) was the correct solution

#### Shannon (v1) context

- Cosmos SDK has a large developer ecosystem & community
- Bridging is a very common problem for all blockchains
- Key question: Is there something free, easy and off-the-shelf?

## 2. Exhaustive exploration of the bridging industry

- Source of concerns:
  - Olshansky suggested to look into hyperlane and it ended up being selected as the final solution. Given Olshansky's lack of expertise and offthe-cuff suggestion, this raised concerns w.r.t what else may be better and out there.
  - 2. Hyperlane was only compared (in the proposal) against a custom solution in the original proposal. Intuition guides a custom solution to be off the table given that we are working off of mainline Cosmos.
- <u>RaidGuild provided a deep comparison</u> of the two following projects upon request:
  - CCIP
  - LayerZero

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	stArgard3n 🗙 03/26/2024 1:34 PM So I have answered questions and implemented some changes as requested @Olshansky. The main question - regardir different stacks I can answer here as well:	g the	e trad	eoffs of	using		
	The main two cross chain technology stacks I examined other than HyperLane were LayerZero and Chainlink cross chain These are similar technologies to Hyperlanes in terms of their Lindyness; and utilization of "sufficiently decentralized" n security.						
	Here are the downsides to LayerZero (It's actually a pretty close call LayerZero is super dope tech) and CCIP:						
	CCIP:						
	<ol> <li>Requires us to outsource our security to Chainlink's Oracle network.</li> <li>Requires us to pay Chainlink for the privilege of using their system.</li> <li>Chainlink can change the price anytime.</li> <li>I couldn't find a Cosmos integration.</li> <li>No free front-end boilerplate.</li> </ol>						
	LayerZero:						
_	<ol> <li>Increased complexity of the codebase.</li> <li>Less high quality boilerplate code; which would increase costs.</li> <li>Their method of utilizing libraries means that each new chain added could require some custom development work.</li> <li>Also no Cosmos integration.</li> <li>No free front-end boilerplate.</li> </ol>						
	Squid Router, Axelar and Polymer were not indicated in the original proposal scope. I did not research any of those tech quick look at them the other day on @aang s recommendation. It's cool looking stuff but I would need to conduct prett provide a recommendation there. (edited)						

- Other solutions not researched in depth include:
  - "vanilla" IBC
  - Axelar (Custom independent network)
  - Squid Router (router on axelar)
  - Wormhole (custom independent network)
  - Polymer (EVM L2 to L2)
  - Union (zk but immature)
  - Router Protocol
  - Synapse
  - Piccaso
  - o ???

## 3. Potential lock-in & future work

• Token transfer for POKT liquidity is the first and key goal

- The selected solution should not preclude future initiatives for general message passing to unblock deeper integrations; e.g. governance, EVM integration, etc...
- The selected 3rd party solution should not create vendor lock-in with a specific project/sdk/ecosystem

## 4. Lack of understanding of the current solution

- Lack of visuals of deep expertise of the existing solution made it hard to evaluate the scope of work that should be done w.r.t:
  - Maintaining & updating existing infra
  - Replacing existing infra
  - Integrating with existing infra
- This was resolved here: <u>https://github.com/pokt-network/wpokt-</u> validator/commit/7b48937b9aa96d0a25a10994af6762bd2651d0bb
- High level
  - POKT <- Custom Infra -> wPOKT ERC20
  - wPOKT <- HyperLane -> Everything else

## **Follow-up notes**

The following projects ARE PROD READY but DO NOT USE IBC:

- Layer Zero
- Hyperlane
- Axelar
- Wormhole

Note: Discussions with ecosystem members showed that some projects "sell themselves" as IBC compatible but are not actually using IBC behind the scenes.

#### Benefits of IBC that most other protocols do not provide:

- Native ACKs / callback
- Native timeouts
- Refunds on failed transfers
- App (token) specific payment channels between specific SRC & TGT

# tl;dr Why are we still going with the original Hyperlane proposal?

- 1. The cross-chain ecosystem is hard to navigate and more immature than it seems from the outside
- 2. Very few inter-chain protocol are *IBC-native* but rather just use IBC in some fashion in their stack
- 3. **vanilla-IBC** is available for free with the Cosmos SDK but would require maintaining extra infrastructure that Hyperlane provides
- 4. Hyperlane enables Pocket to maintain it's own bridging validator set and "potentially" move it elsewhere in the future.

# Bonus

## Request for a discussion to increase scope such that:

- Listeners & callbacks are added to listen on changes in Pocket's L1 validator set
- The entire Pocket validator set is used to sign the following bridge рокт <-Custom Infra -> wPOKT ERC20

## Why?

- Increase the security of the bridge
- Make the security of the bridge as permissionless as pocket itself
- Potentially have the most secure bridge in the industry

## When?

- Not during the migration work
- After Shannon mainnet launch