Hi everyone, I'm Bastien. I'm part of the Distributed Computing Lab (DCL) at EPFL. Currently, we are working in collaboration with the Ethereum Foundation to conduct performance and security evaluations of layer 2 systems. With this study, we hope the evaluation results we provide could help the community to identify and understand performance and security issues that could exist in current systems. We are now focusing on Arbitrum.

For context, the lab already conducted this study over L1 blockchains, you can find the relevant publication [here](#)

To study Arbitrum, we aim to deploy a private worldwide Arbitrum network over a private Ethereum network. As I'm new to Arbitrum, and still learning from the documentation, I'm not fully comfortable yet. I'm reaching out for a step-by-step explanation of how to deploy Arbitrum, specifically for a minimal setup first. I have attempted to find an online tutorial for deploying Arbitrum but without success.

More concretely, given any Ethereum network, which smart contracts should be deployed on this L1 network? Which Arbitrum nodes (a sequencer, a full nitro node, a validator, etc…) are required to run? How many of them are needed? Are there other steps required?

Thank you in advance for your support!