

Decentralized Attestation and Distribution of Information using Blockchains and Multi-Protocol Storage

Prof. Rahul Raut, Nilesh Aher, Yogeshkumar Jagtap, Vaibhav Jamdhade, Rutvik Kalamkar

Department of Information Technology

Sandip Institute of Technology and Research Centre, Nashik, India

Abstract: *If blockchain networks are to become the building blocks of the infrastructure for the future digital economy, then several challenges related to the resiliency and survivability of blockchain networks need to be addressed. The survivability of a blockchain network is influenced by the diversity of its nodes. Trustworthy device-level attestations permits nodes in a blockchain network to provide truthful evidence regarding their current configuration, operational state, keying material and other system attributes. In the current work we review the recent developments towards a standard attestation architecture and evidence conveyance protocols. We explore the applicability and benefits of a standard attestation architecture to blockchain networks. Finally, we discuss a number of open challenges related to node attestations that has arisen due to changing model of blockchain network deployments, such as the use virtualization and containerization technologies for nodes in cloud infrastructures.*

Keywords: Attestation, Ipfs, Decentralized Storage, etc

REFERENCES

- [1] FELIX HÄRER AND HANS-GEORG FILL, “Distribution of Information Using Blockchains and Multi-Protocol Storage”, (2022)
- [2] Thomas Hardjono1 and Ned Smith, “An Attestation Architecture for Blockchain Networks”, (2020)
- [3] Digitalization and Information Systems Group, “Decentralized Attestation of Conceptual Models Using the Ethereum Blockchain”, (2019)
- [4] Antonio Tenorio-Fornés - Samer Hassan - Juan Pavón,”Thomas Hardjono1 ·Ned Smith, “Towards an attestation architecture for blockchain networks”, (2021)
- [5] Open Peer-to-Peer Systems over Blockchain and IPFS: an Agent Oriented Framework”, (2018)
- [6] George Coker, Joshua Guttman, Peter Loscocco, Justin Sheehy, and Brian Sniffen,” Attestation: Evidence and Trust”, (2018)
- [7] Hans-Georg Fill , Felix Härer, “Storing and Attesting Conceptual Models on Blockchains”, (2020)
- [8]T.Hardjono,“BlockchainInteroperability and Survivability,” September 2018, presentation 2018 IEEE Global Blockchain Summit, NIST, Gaithersburg, MD (17-19 September 2018).
- [9] R. Hasan, Z. Anwar, W. Yurcik, L. Brumbaugh, and R. Campbell, “A survey of peer-to-peer storage techniques for distributed file systems,” in Proc. Int. Conf. Inf. Technol., Coding Comput. (ITCC), vol. 2, Apr. 2005.
- [10]V. Buterin, G. Wood, and J. Wilcke. (2014). A Next-Generation Smart Contract and Decentralized Application Platform. Accessed: Nov. 26, 2021
- [11]H. Huang, J. Lin, B. Zheng, Z. Zheng, and J. Bian, “When blockchain meets distributed file systems: An overview, challenges, and open issues,” IEEE Access, vol. 8, pp. 50574–50586, 2020
- [12]G. Wood. (2014). Ethereum: A Secure Decentralised Generalised Transaction Ledger. Accessed: Feb. 8, 2019