

Topological Analysis of Bitcoin's Lightning Network

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January 6, 2019

Abstract

Keywords: Bitcoin, Lightning Network, Network Topology, Payment Channel Network

1 Introduction

2 Lightning Network's Topology

3 Robustness of LN

3.1 Random Failures

3.2 Targeted attacks

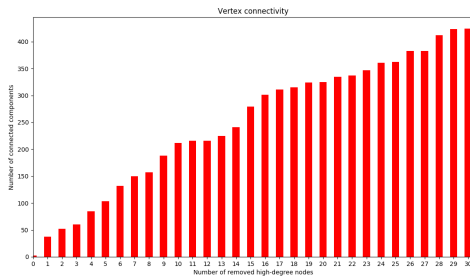


Figure 1: LN's vertex connectivity

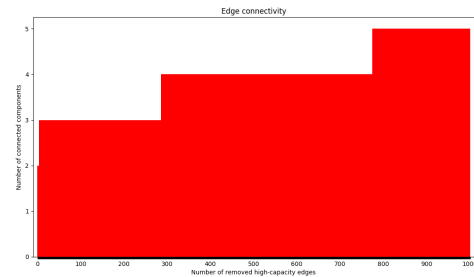


Figure 2: LN's edge connectivity

3.3 Fixing LN's resilience against attacks

percolation threshold

4 Privacy

topological anomalies have privacy implications, low usage of tor, even tor can not help

5 Conclusion

6 Acknowledgements