Contribution ID: **156**   Type: **Sectional reports**

Efficient gossip-based protocol in the Neo blockchain network

Tuesday, 6 July 2021 15:20 (15 minutes)

Epidemic algorithms are widely explored in the case of distributed systems based on trustful environments. However, an assumption on arbitrary peers behaviour in Byzantine fault tolerance problem calls into question the appropriateness of well-studied gossip algorithms since some of them are based on aggregated network information, i.e. the number of nodes in the network, etc. Given this problem, the task of designing effective, scalable and reliable gossip-based network protocol for blockchain systems still remains a tricky one. In this study, we analyze the performance and impact on reliability and consistency of the gossip-based network protocol in the Neo blockchain and propose, implement and evaluate protocol improvements to reduce this impact. The enhanced protocol implementation is tested on a 100-node Neo cluster and allows achieving significant reduction in the network traffic consumption and improving message delivery probability on the experimental network.

Summary

Primary authors: SHALEVA, Anna; KORKHOV, Vladimir (St. Petersburg State University)

Presenter: SHALEVA, Anna

Session Classification: Distributed computing, HPC and ML for solving applied tasks

Track Classification: 10. Distributed computing, HPC and ML for solving applied tasks