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Reproducibility by Design: A Family of Testbeds for High-Precision Network Experiments

Friday, 8 November 2019 11:39 (7 minutes)

Reproducibilification, i.e., making experiments reproducible, is the ultimate goal for successful scientific experiments. In this work, we identify key challenges for the design of reproducible network experiments. We present our approach for reproducible network research which enforces an experiment workflow leading to inherently replicable network experiments. Our approach realized in our testbed infrastructure combines high-precision measurement tools, full automation, and support for publishing experiment scripts and results. We further present ongoing work, including extending high precision traffic generation and measurement capabilities for 100G Ethernet. Future plans involve the creation of a multi-site wireless testbed, which connects our testbed infrastructure with different remote testbeds, thereby creating a federated testbed. This federated testbed can be used for scenarios combining 5G Radio Access Network infrastructure with high-performance backbone infrastructure to investigate low-latency communication and edge computing use cases.

Primary author: CARLE, Georg (TUM)

Presenter: CARLE, Georg (TUM)

Session Classification: Reproducibility and Open Data