Emulation vs. Simulation: A Case Study with DoS Attacks

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A lot of research is done on simulators such as ns-2 and SSFNet. Simulators, however, cannot execute real applications, and only approximate various appliances. Emulation provides a way to use real appliances and applications, but is constrained by the number of nodes, types of appliances, and difficulty in configuration. Therefore, it is imperative to accurately compare the two, so that the strengths of both approaches can be harnessed.

Model Overview

\[ W_{\text{max}} = \lim_{i \to \infty} (2^{-i}W_i + \alpha(\sum_{j=0}^{i-1} 2^{-j})) = 2\alpha \]