Data Transfer: Modeling, Simulation and Measurement

Master Thesis:

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Modeling, Simulation, and Measurement of Lock-Keeper Data Transfer

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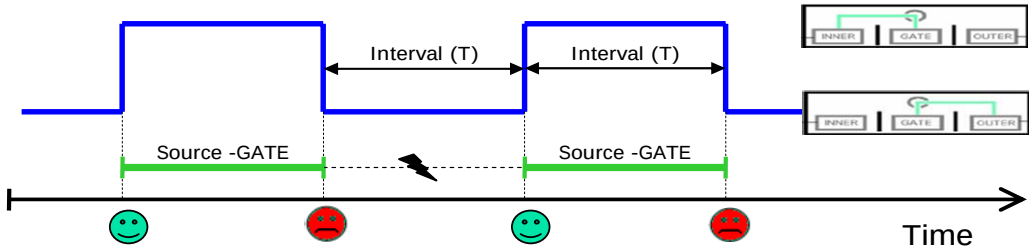
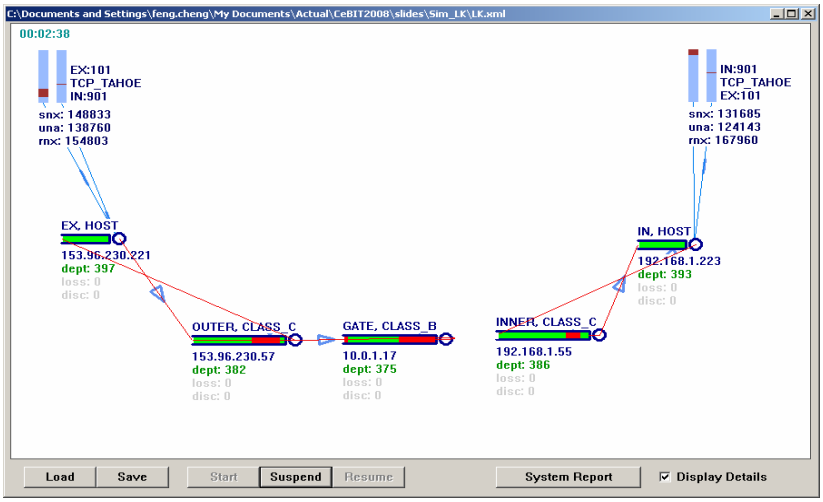
Lock-Keeper is a modern system which can entirely prevent specific intruder attacks by physically separating the communicating networks so that higher levels of security can be guaranteed. Because of the special connection states of two separate networks, the data exchange provided by the Lock-Keeper has many complicated characteristics.

How to define, measure and visualize data transfer of such Physical Separation (PS) devices as the Lock-Keeper is an interesting research topic. The objective of this thesis includes, (1) analyzing and modeling the working procedure of Lock-Keeper, (2) building a mathematical model to theoretically present the performance of Lock-Keeper file transfer, (3) detecting suitable parameters to specify the performance, (4) providing some experiential reference for optimization of the Lock-Keeper.





An innovative simulation tool is expected to be designed in this thesis for visualizing the results of all the abovementioned study and design. The tool, which models data transfer procedure, could be helpful for explain the special data flow in the Lock-Keeper to non-professionals as well as normal Lock-Keeper customers. Several data visualization approaches can also be integrated into this tool to describe the performance.

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