Abstract

An interesting target for the intruders is computers, since valuable data are fed into it. The need for impeccable intrusion detection system is growing every day. Hardware based Network Intrusion Detection System (NIDS) relies upon power, delay and area. The Counting Bloom filter (CBF), improves the power and speed of membership test by maintaining a hazy and compact representation of large set to be searched. Our proposed architecture utilizes an array of Linear Feedback Shift Register (LFSR) along with tri-state buffers. Circuit simulation is shown for 8-bit count per entry. Simulation results show that proposed architecture is 35% hardware efficient compared to Low Power Fast Counting Bloom Filter (L-CBF) and Static Random Access Memory based Counting Bloom Filter (S-CBF).


- P. Alfke, &quot;Efficient shift registers, LFSR counters, and long pseudo-random sequence generators,&quot; Xilinx, San Jose, CA, Appl. Note 052, Jul. 1996.


Index Terms

Computer Science
Circuits And Systems
Keywords
Counting Bloom Filters  Area efficient counting bloom filter (A-CBF)  Intrusion Detection System
Linear Feedback Shift Register
Tristate buffer