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(54) Title: A METHOD AND APPARATUS FOR WIRE-SPEED APPLICATION LAYER CLASSIFICATION OF DATA PACK-
ETS

(57) Abstract: A data packet classifier to classify a plurality of N-bit input tuples, said classifier comprising a hash address, a memory and a comparison unit. The hash address generator generate a plurality of M-bit hash addresses from said plurality of N-bit input tuples, wherein M is significantly smaller than N. The memory has a plurality of memory entries and is addressable by said plurality of M-bit hash addresses, each such address corresponding to a plurality of memory entries, each of said plurality of memory entries capable of storing one of said plurality of N-bit tuples and an associated process flow information. The comparison unit determines if an incoming N-bit tuple can be matched with a stored N-bit tuple. The associated process flow information is output if a match is found and wherein a new entry is created in the memory for the incoming N-bit tuple if a match is not found.