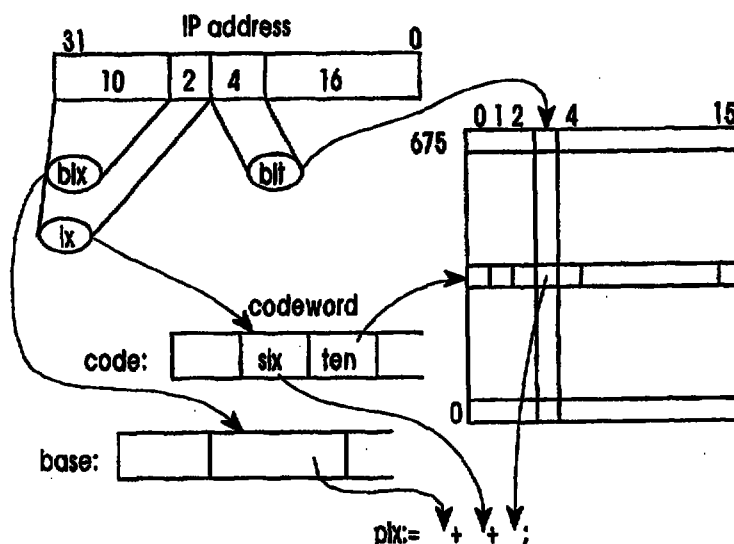




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(54) Title: METHOD AND SYSTEM FOR FAST ROUTING LOOKUPS



(57) Abstract

In a method of IP routing lookup in a routing table, comprising entries of arbitrary length prefixes with associated next-hop information in a next-hop table, to determine where IP datagrams are to be forwarded, a representation of the routing table is stored, in the form of a complete prefix tree (7), defined by the prefixes of all routing table entries. Further, a representation of a bit vector (8) comprising data of a cut through the prefix tree (7) at a current depth (D), and an array of pointers, comprising indices to the next-hop table and to a next-level chunk, are stored. Said bit-vector (8) is divided into bit-masks and a representation of the bit-masks is stored in a maptable. Then, an array of code words, each encoding a row index into the maptable and a pointer offset, and an array of base addresses are stored. Finally, the lookup is performed.