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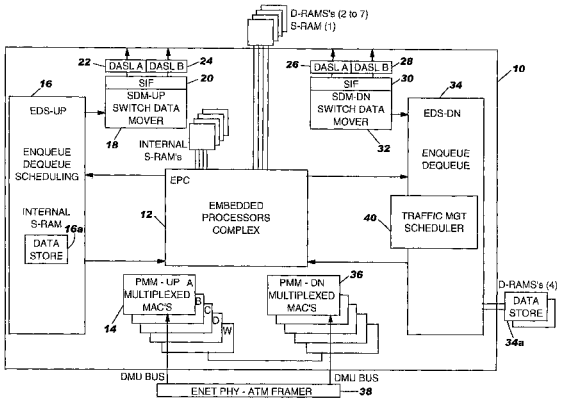
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(54) Title: METHOD AND SYSTEM FOR FRAME AND PROTOCOL CLASSIFICATION



(57) Abstract: A system and method of frame protocol classification and processing in a system for data processing (e.g., switching or routing data packets or frames). The present invention includes analyzing a portion of the frame according to predetermined tests, then storing key characteristics of the packet for use in subsequent processing of the frame. The key characteristics for the frame (or input information unit) include the type of layer 3 protocol used in the frame, the layer 2 encapsulation technique, the starting instruction address, flags indicating whether the frame uses a virtual local area network, and the identity of the data flow to which the frame belongs. Much of the analysis is preferably done using hardware so that it can be completed quickly and in a uniform time period. The stored characteristics of the frame are then used by the network processing complex in its processing of the frame. The processor is preconditioned with a starting instruction address and the location of the beginning of the layer 3 header as well as flags for the type of frame. That is, the instruction address or code entry point is used by the processor to start processing for a frame at the right place, based on the type of frame. Additional instruction addresses can be stacked and used sequentially at branches to avoid additional tests and branching instructions. Additionally, frames comprising a data flow can be processed and forwarded in the same order in which they are received.

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