

To show that write – once Turing machine is equivalent to an ordinary Turing machine, first we simulate an ordinary Turing machine by a write – twice Turing machine.

Simulation of an ordinary Turing machine by a write – twice Turing machine:

Let the original machine be M . The two techniques by which it can be shown that write-once Turing machine is equivalent to an ordinary Turing machine.

The first technique is to copy the entire tape between transitions. In this one extra tape symbol is required as a delimiter and an expanded alphabet is required to record the position of the tape as it is copied.

In this case two writes are required: The first write is used while copying to record the symbol over fresh tape, the second write is used to mark a symbol as copied.

The second technique is that the use of tape is not required. In this two tape squares are required to be used, instead of recording each symbol in one tape square. The first square is used to record a tape symbol and the second is used to mark the symbol as being copied. Each tape square can be changed only once.