

Initialization (computer system starts)

1. Initialize input queue to empty
2. Force the device to interrupt

Upper half (application performs read)

1. If input queue is empty, temporarily stop the application
2. Extract the next item from the input queue
3. Return the item to the application

Lower half (interrupt occurs)

1. If the queue is not full, start another input operation
2. If an application is stopped, allow the application to run
3. Return from interrupt

Figure 17.5 The steps that the upper and lower halves of a device driver take for an input operation when queueing is used. The upper half temporarily stops an application until data becomes available.