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To identify the right callbacks from the server response, I associated with each active callback an id called **callback\_id**. This is a long variable that is increased by 1 each time **callbackSend** is called, ensuring that each callback has an associated unique id. The waiting callbacks are stored in the hashmap **callbacks** which map callback id's to callbacks. The hashmap and id's are protected under a lock, ensuring thread safety.

In MyDBClient.java, the callback id is appended to the end of the message with a “|” separator. The pipe symbol was chosen since the Cassandra commands do not use it, meaning it is safe to use as a delimiter. Since the server echos that message back, we can extract the callback id that is next to the delimiter and find its callback in the hashmap. On the server side, the server removes any characters to the right of and including the pipe symbol before relaying the message to the Cassandra instance. This means that the server can execute messages even if they do not use the callback encoding.