Assume that a distributed system is susceptible to server failure. What mechanisms would be required to guarantee the “exactly once” semantic for execution of RPCs?

Step 1:

A potent method for building distributed, client-server-based systems is remote procedure call (RPC). It works by extending the standard local procedure call so that the called procedure does not have to be in the same address space as the calling procedure. The two processes could be running on the same system or other systems that are connected by a network.

Step 2:

The server should maintain note of what RPC operations were received, whether they were completed successfully, and the outcomes related to the operations in stable storage (such as a disc log). The server can determine whether an RPC has already been executed when a server crash occurs and an RPC message is received, guaranteeing "exactly once" semantics for the execution of RPCs.