

# RPC failure semantic - at-most-once

- Problem with at-least-once behavior

What if the request is "deduct \$100 from bank account" ?

➡ At-least-once works well with idempotent requests

Another (better) RPC behavior - **at-most-once**

- ➡ Having Server RPC code detects duplicate requests returns previous reply instead of re-running handler
- How to detect a duplicate request?
  - Client includes unique ID (XID) with each request, and uses the same XID for re-send
  - Server checks an incoming XID in a table, if an entry is found, directly returns the reply

# Problems with RPC - performance

Cost of Procedure Call  $\ll$  same-machine RPC  $\ll$  network RPC

➡ Means programmers must be aware that RPC is not free