Fault Tolerance

- Server Failure
 - NM heartbeats to RM
 - If server fails: RM times out waiting for next heartbeat, RM lets all affected AMs know, and AMs take appropriate action
 - NM keeps track of each task running at its server
 - If task fails while in-progress, mark the task as idle and restart it
 - AM heartbeats to RM
 - On failure, RM restarts AM, which then syncs it up with its running tasks
- RM Failure
 - Use old checkpoints and bring up secondary RM
- Heartbeats also used to piggyback container requests
 - Avoids extra messages